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CARCINOMA TONGUE—RADIUM TREATMENT AND ITS TECHNIQUE

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There is only one variety of carcinoma which attacks the tongue, *viz.* squamous celled carcinoma. Glandular carcinoma has not been seen except in those cases involving the mucous and salivary glands. The type affecting the posterior part of the tongue is the " transitional cell carcinoma " without cell nests.

Microscopically, there are two varieties:—(a) the typical epithelial cancer with well-marked cell nests and (b) those without formation of cell nests—these are very cellular and highly malignant.

Position:—No part of the tongue is exempt from carcinoma. The anterior part of the tongue and its lateral borders are the common situations. The posterior part of the tongue also forms a fairly common situation for the growth: this is, however, very often an extension of growth from the tonsil or other surrounding tissues. The dorsum or undersurface of the tongue is rarely affected.

Age:—The greatest number of cases tend to occur towards the 5th decade. Children and young adults are nearly exempt from the disease. This possibly is true because the predisposing factors are absent or because the predisposing causes have had no sufficient time to develop into a malignant disease. There are, however, exceptions to the rule.

In our cases, the age of the patients varied from 41 years to 72 years and an average being 58 years. Out of all the cases of carcinoma of the tongue nearly 50% of the cases were secondarily involved by an extension of growth from tonsil, lateral pharynx and in some cases extension of the growth from the pyriform fossa.

60% of cases were found on the right side and the rest on the left. Only one case had a growth in the middle of the tongue with bilateral secondary metastases in the cervical glands. Wassermann test could not be undertaken in all cases, but in those cases where Wassermann test was done, mostly all cases showed negative reaction.

Aetiology:—Prolonged irritation by inflammatory, traumatic, or chemical agents tends to upset the balance between epithelial and connective tissues, either by activating the growth of the epithelial cell or by inhibiting the normal control of the connective tissue. If now the irritation continues, a secondary factor now comes into play—the exciting cause, which is yet to be discovered. As soon as this secondary factor comes into play, the line of demarcation between the pre-cancerous and cancerous states is passed, and the fight between these two sets of cells begins relentlessly. The resisting power of the

normal tissue is overcome gradually, and there is only one possible end of the fight.

Predisposing causes:—(a) Family history of persons suffering from cancer is not always present, (b) long continued irritation and chronic inflammatory conditions of the mucous membrane of the tongue, *e.g.* leukoplakia and chronic superficial glossitis, (c) injuries caused by carious jagged tooth or teeth over a prolonged period, (d) syphilitic affections of the tongue in the form of glossitis or leucoplakia, (e) ill-fitting dental plates. And lastly, (f) the application of caustics or strong chemicals to leucoplakia or simple ulcers over the age of 30. This latter practice cannot be too strongly condemned. The possible good to be gained from its application to the ulcer cannot be, by any means, compared to the irreparable injury which this practice has produced.

In all our cases, very careful history as regards the chewing of *pan* and betel-nut, smoking cigarettes and chewing tobacco has been noted. Carcinoma was present in a fair number of patients who did not chew *pan* or tobacco.

Clinically, one differentiates four types of neoplasms: the papillary, the nodular, the ulcerous and the fissured types. If we are to consider the degree of malignancy from the surgical point of view it is in the order just mentioned above. But as far as radium is concerned, the prognosis is reversed: and the first type, *i.e.* the papillary type which is most malignant responds best to radium treatment. The more rapidly the tumour grows, the more sensitive it is to radium emanations.

The Ulcerative type:—The commonest variety: it may occur in any part of the tongue: in our group of cases this type was mainly seen on the posterior-half of the tongue: according to others, it is usually limited to the anterior half of the tongue.

The Papillary type:—This is an important group. As already mentioned it is highly malignant and highly radio-sensitive. It may occur in the form of a small wart or a biggish papillary mass. Usually this type soon gets infected, producing excoriation and tendency to bleed easily.

The Nodular type appears first as a hard flattened surface and then becomes a small nodule. The surface is smooth, devoid of papillæ. In later stages, it breaks up into an ulcer. This is a slow growing type and we have been given a history of the lump being there for 8 to 9 months.

The Fissured type occurs usually in old standing syphilitic affections. The fissured part is usually the superficial part of the neoplasm, whereas the main mass lies underneath.

Lastly, there is the multiple type which is very rare.

Diagnosis:—There is only one positive diagnosis of carcinoma of the tongue and that is microscopical evidence. This practice of establishing diagnosis in every case does not meet universal approval. This is the routine method carried out at the Paris Radiological Institute: no case is labelled malignant without this test. Whilst there are others who consider that this practice favours dissemination and increases the rate of growth. If biopsy should be done, let it be done by a diathermy knife. It is argued that the microscopical appearances are a help in assessing the prognoses by differentiating between various histological grades, some being radio-resistant and others radio-sensitive. It may be true of such a situation as cervix uteri where differentiation between squamous cell and adeno-carcinoma is of the greatest importance both as regards prognosis and the method of treatment adopted. In new growths of the tongue, the question is quite different. There is only one gross histological type—the squamous cell carcinoma. As regards differential diagnosis, syphilitic lesions are the main factors to be considered. A primary chancre is usually seen in young adults and nearly always at the tip of the tongue. Glands are soft, very large, and early involved: Spirochæta pallida may be demonstrated. It is the tertiary syphilis which is most difficult to distinguish, specially the gumma which very much resembles the nodular flat variety. In both, the progress of the disease is slow: gummatous ulcers are more often multiple. Wassermann reaction is of help, if positive, *but* this does not rule out malignant disease. And this is a very important and vital fact. Hypertrophied papillæ sometimes may be mistaken for a small growth, but a careful examination reveals the exact nature of the lesion.

Tuberculous ulcers are rare and are found towards the tip of the tongue. These are usually preceded by tuberculous lesion in the lung.

Treatment:—The treatment of carcinoma of the tongue is twofold: (1) Radium therapy to the

primary lesion in the mouth cavity and (2) the treatment to the lymphatic bearing area of the corresponding side of the neck.

The success of the radium treatment depends upon the condition of the tissues bearing the growth. Old standing glossitis or syphilitic changes predispose to marked fibrosis, and lead to changes in the blood vessels and lymphatics in the tongue. As the best results are obtained in those cases where blood supply is richest and lymphatic drainage freest, the condition of the stroma of the new growth is of utmost practical importance.

The presence of œdema of the tongue is of gravest import and the prognosis therefore is frankly bad in those cases where œdema is considerable.

The anatomical situation of the lesion in the tongue affects the results obtained. The most favourable situation is the anterior part of the tongue or its lateral margins, the least favourable being the floor of the mouth or the inferior surface of the tongue. Here the growth extends *early* beyond the intrinsic muscles of the tongue and down towards the submaxillary and submental regions. They also usually involve the alveolar margin and these factors render the radiation treatment difficult.

The posterior part of the tongue is also an unfavourable situation because it presents difficulties in approach. The extent of the lesion is also usually under-estimated, and therefore recurrences are common. It also adds to the difficulty of the technique of burying radium needles into the growth. Our earlier results of treatment of the posterior part of the tongue showed recurrences but these faults have now been remedied by improved technique.

The next question that now arises is whether it is advisable to treat the neck or the primary lesion first? It is the custom at our clinic to treat the primary lesion first, allowing a period of about four weeks to elapse between the treatment of the primary growth and that of the cervical area. The reason for adopting this method, which has given us satisfactory results, are based upon the necessity of giving the patient the best possible blood and lymphatic supply to the area treated. This is an all-important matter. The disappearance of the tumour is hampered by the removal of the lymphatics and ligation of blood vessels, which, of course, is the object of the block dissection operation on the neck. Therefore the treatment of the neck is left until after four weeks of the radium treatment to the tongue.

Primary Lesion:—Before the primary lesion is tackled with radium, there is a very important item—"the toilet of the mouth cavity" to be considered and carried out religiously. All carious teeth are extracted: tartar is scraped, if possible: gold bridges and metal fillings must be removed to avoid secondary radiations which may lead to necrosis of the soft tissues and bone. It has been our experience that as a result of adopting this routine, the already present œdema of the tongue begins to subside and what is more the size of the growth also diminishes appreciably. This obviously is due to the removal of existing superadded infection. Also the resulting reaction due to radiumization is very much reduced. In those cases where the growth has extended to the alveolus, the tooth or teeth adjoining, are better left alone until such time when the radium reaction has subsided. In those cases where Wassermann reaction is found to be positive, the specific treatment is commenced during this preliminary stage.

The principle of the treatment to the primary lesion is based on prolonged irradiation with small quantities of well-screened radium. Older methods of treatment by larger doses of radium and inadequately screened radium resulted not infrequently in radium burns of the tissues, soft parts or bones. Besides, the resulting scars were formidable.

Before the patient is taken to the theatre, a rough idea has to be gathered as to how many radium needles would be required. Usually the number required are from seven to nine needles. Each needle usually contains 1·33 mg. of radium element. The filtration of each needle used is 0·5 mm. of platinum. The total dosage required on an average is roughly 1,200 mghrs.

These needles are first boiled in lysol, and then wiped clean. These are now threaded with strong silk. The silk is differently coloured to denote different strengths. The needles are then placed in a special container or wrapped in sterilized gauze, and finally boiled for six minutes. They are now ready for use.

Three-fourths of an hour before the patient is taken for interstitial radiation, an injection of ¼ gr. morphia and 1/150 gr. atropine sulphate is given.

Morphia quiets the patient and the latter diminishes the secretion in the mouth.

It is our practice to use a local anæsthetic in every case—novocaine 1% solution, before inserting the radium needles. If the neoplasm is in the anterior part of the tongue, it is only sufficient to inject novocaine around and under the growth. The quantity used is usually small in amount, never more than 10 or 15 c.c. being required. Sometimes it is necessary to block the corresponding lingual nerve. In cases where the growth lies in the posterior part of the tongue, novocaine is injected through punctures made externally in the submental region, keeping the left index finger at the back of the tongue, as a guide.

In no case of ours a general anæsthetic was necessary. Only in one case, tracheotomy had to be performed before burying of radium was carried out.

The next step is to introduce the radium needles to obtain complete retrogression of the disease. The mouth is kept open by a special mouth gag, and the tongue is pulled forwards and held in a piece of gauze. Then by means of special forceps the needles are inserted into the healthy tissue immediately around the growth, and finally pushed home by a pusher. The needles are completely buried and no part of the needle is allowed to remain peeping. A kind of barrage is formed under and around the lesion by a palisade of needles placed at a distance of 1 cm. apart. After the needles have been inserted, the threads are collected together, brought out at the angle of the mouth and tied with a ligature in and outside. The threads outside are strapped down to the cheek by adhesive plaster. Where the lesion has spread to the alveolar margin, the needles used are of higher screenage (0·8 mm. of platinum). Sequestrum is usually inevitable in such cases and takes months to separate.

The number of needles used in a given case is carefully entered on the special radium chart and the patient is then sent to the ward.

After Treatment:—After treatment, in a sense, forms the most important stage of the treatment.

(1) The patient is strictly kept on a bed rest. and not allowed to lie flat in bed, for fear of pulmonary complications. This is a real danger in patients with advanced age.

(2) In general hospitals, he is not at all allowed to get out of bed; nor is he allowed to go to the lavatory for fear of losing the radium needles.

(3) He is instructed not to speak: this is particularly important when the anterior part of the tongue is involved because the movements of the tongue in this part is most marked and therefore there is a tendency for the needles to extrude from the substance of the tongue. He is provided with a slate and a pencil to write down his desires and questions. A series of questions are usually seen written down on the slate in the morning when the surgeon takes his rounds.

(4) The mouth is irrigated twice a day with a non-metallic antiseptic. A good example being Condy's fluid.

(5) Diet is necessarily fluid: sometimes it is necessary to adopt nasal feeding.

(6) A fair number of patients become " chesty " and develop cough during the treatment and as a routine we inject transpulmin 2 c.c. daily (intramuscularly).

(7) When fluid intake becomes restricted for some reason or other, we inject intravenously 20 c.c. of 25% glucose solution. This is of great help in weak and cachectic patients.

(8) A strict watch is kept daily on the position of the buried needles. Should a needle become displaced it is removed and at once a note is made of it in the column specially provided for in the chart. Frequently 2 or 3 needles are partially displaced and in such cases, these are pushed back with a pusher after cleansing.

Usually after 3 to 4 days, the tongue becomes slightly œdematous, the degree varying according to the previous treatment directed towards an eradication of infection. The œdema should be moderate. If severe œdema takes place, all needles should be immediately removed.

Good nursing is of utmost importance.

(9) Sleep may be induced, if necessary, with luminal gr. 1. As a rule, the treatment is well tolerated and a surprising thing is that in spite of several needles having been implanted in the substance of the tongue, the pain which was agonizing before, is now considerably allayed, and is now well-

nigh tolerable. Patients are, however, apt to complain of pain in the corresponding ear. These needles are then removed at the end of that period, without any aid of an anæsthetic. The mouth cavity is now well rinsed, and the patient is allowed to go home on the same day.

Changes produced by Irradiation:—These are noticed on about the 5th, 6th, 7th or the 8th day. The earlier they take place, the better the prognosis. The first change is the reduction of the size of the growth; the ulcer appears shallower and edges less defined and softer. On palpation the induration is not so well-marked. Soon the area treated becomes covered with a smooth layer of white fibrin. On or about the 10th or 12th day the white layer becomes yellowish. This area then gradually becomes smaller by epithelization from the periphery. Within four weeks the lesion is healed and practically no abnormality is detected.

The patient is instructed to appear for examination once every week for four weeks when the treatment to the cervical lymph glands is planned out. There is no doubt that in the present state of radium therapy, surgery is to be given preference in treating the neck. The question does not arise if the glands are palpable. In such cases surgical removal is the treatment of choice. All enlarged glands are not necessarily malignant but operation offers the best possible chance of preventing metastases. The debatable point is whether one is justified in doing a block dissection when glands are not palpable: Is prophylactic radiation to be preferred?

In our limited experience it appears that operation under local anæsthesia is the safer method, and should be carried out in every case four weeks after radiation of the primary lesion. Any operation, short of a complete block dissection has nothing to recommend. The operation aims at removal of all glands (including submaxillary), deep fascia, sternomastoid muscle and internal jugular vein.

Half an hour before the operation is commenced M. A. S. S. (morphia-atropine-scopalamine-strophanthin) is injected.

Operative Technique:—With a sand bag put under the shoulders, regional anæsthesia is induced. The line of incision extends from the mastoid process to the inner end of the clavicle. Another incision starting under the chin meets the former incision somewhere towards its middle. Hence three flaps are marked out. The removal of the sternomastoid simplifies the whole operation and renders a much better exposure for removal of all glands *en masse*. Particular attention is paid to certain areas of the neck according to the different positions of the growth, *e.g.* the submaxillary area or the carotid group of glands. The internal jugular vein is removed *en masse* with the glands, from above the clavicle right up to the base of the skull. The deep fascia is removed right up to the middle line of the neck.

Towards the completion of the operation it is our practice to insert 4 to 5 radium needles in areas where we expect recurrences. Special attention is paid towards the angle of the mandible and deep parotid regions. The incision is closed with separate 2 or 3 stab drains.

Daily, for 5 to 6 days, the patient is given intravenously a course of Iodoseptine (B) 10 c.c.

For several days after the operation, there is some œdema of the lower face and a temporary lower facial palsy. When glands are found on both sides, the operation is performed on the opposite side after the lapse of a fortnight and obviously the internal jugular vein must be removed on the more affected side.

All glands must be individually examined histologically and only in absence of any deposits is no further treatment indicated, except keeping the patient under observation.

If, however, there is evidence of secondary deposits, the cervical area must be irradiated by deep X-rays or by an external radium collar.

In our cases, we usually employ the collar method. Collar of Columbia paste (beeswax-paraffin-fine wood sawdust) of 15 mm. thickness is employed. They are light and moulded to the desired shape of the neck of the individual; radium needles are then accurately distributed on the outer side of the plaque and finally strapped by adhesive plaster. The plaque is then applied to the neck and a bandage applied over it to keep it in position. Lead pieces are incorporated in the plaque to protect the thyroid cartilage and the ramus of the jaw. On an average 70 mg. of radium element is required. Needles of 2 and 1·33 mg. strength are used. A period of about 3 weeks or more is allowed to elapse between the operation and the application of the collar.

The duration of this collar application should extend well over 16 to 18 days. An average post-

operative dose is roughly 10,000 mghrs. The patient receives 14 to 16 hours of exposure daily. The skin at the end of treatment shows a reaction as manifested by superficial desquamation and peeling of skin.

Inoperable Cases:—In these cases complete surgical removal is impossible. It is the custom in our clinic to bury needles in these inoperable masses and hope for the best. This has often to be supplemented by injections of snake venom, and various hypnotics and analgesic drugs.

Alternative methods used for such cases are the deep X-ray therapy and radium collar.

The interstitial method is followed by surface application of the collar some 4 weeks later.

I have made no mention of the bomb therapy, as we have no " bombs " here and therefore no experience. This apparatus offers an alternative to collar treatment in the second stage of radium treatment to the cervical area. No opinion can as yet be expressed as to its value. It, however, presents many advantages and disadvantages, the chief disadvantage being the very large quantity of radium required.

Read at the Scientific Session of the XIII All-India Medical Conference, Karachi, December 27, 1936.

XIV ALL-INDIA MEDICAL CONFERENCE

It has been decided to hold the 14th session of the All-India Medical Conference, this year, at Madras during X'mas week (probable dates being 26th to 31st December, 1937). The aim of this Conference is to bring together medical men from all over India on a common platform, to discuss and formulate their views, on matters of vital importance to the medical profession.

The Conference will have Three Sections:

1. *The General Section :* In which matters relating to Medical Educations and Medical Relief, Public Health and Sanitation, Medical and Medico-social legislation, etc., will be discussed.
2. *The Scientific Section :* The co-operation of all members of the medical profession is essential to make this section a thorough success. This section affords the ideal opportunity for the Indian medical fraternity to exchange views on the latest scientific advances, research work, and medical problems peculiarly Indian. Foreign visitors are also expected to visit the Conference. Original papers and the case notes on the different aspects and branches of medicine are invited and the contributors are requested to send the names and titles of their contributions before the 15th November, 1937 to the Secretary, Scientific Section, 20, Thambu Chetty Street, Madras. Proper arrangement for projection and audibility will be made. The papers read at the Conference will be the property of the Association and will be published in the Journal of the Indian Medical Association. A typed copy of the paper together with a short abstract should be sent before the 7th December, 1937.
3. *Medical Exhibition Section :* In connection with the All-India Medical Conference there will be a Medical Exhibition. As a large number of medical men from all over India will attend this Conference, it will afford a very good opportunity to dealers and manufacturers of medical and surgical requisites to display their products. Those who are willing to take stalls at the Exhibition will please write to the Secretary, Conference Exhibition, 20, Thambu Chetty Street, G. T., Madras.

Delegates. All medical practitioners possessing registrable qualifications will be entitled to be delegates of the Conference on payment of certain scales of fees. They will be entitled to vote and take part in the Conference. Members of the Indian Medical Association directly or through its brances, will pay each Rs. 5/- as delegation fee and medical men who are not members will pay a delegation fee of Rs. 8/- each.

Delegates of the Scientific Section only will pay Rs. 5/- each and take part in the proceedings of the Scientific Section. Bonafide medical students may join the Scientific Section as student visitors on payment of Rs. 2/- each as admission fee, but shall not be allowed to take part in the discussion.

Scientists other than medical men will also be entitled to be delegates and take part in the Scientific Section on payment of a delegation fee of Rs. 5/- each.

SOME IMPORTANT POINTS RELATING TO HEPATIC DISORDERS IN CHILDHOOD

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The progressively larger realisation of the great importance of liver in the human economy,—and thanks to the labours of Mann, McNee, Rolleston, Aschoff, Van den Bergh and others,—the large advance made within the last twenty years or so relative to its structure and diverse functions and their tests have thrown into prominence more than ever before the great necessity of realising well, deviations from normal. The necessity appears specially great in childhood, when we remember that under normal circumstances, the liver grows in weight about 12 to 13 fold from birth to maturity. As to the progress of increase of which the highest figure is about 150 Gr. or about 53 oz., I may say that the liver's weight at birth becomes more than double by the end of the first year, treble in the third, 6 fold by the 9th year and 12 to 13 times by maturity *i.e.* by about 18th or 20th year. It should be remembered that it is from birth to about the middle of juvenile life, meaning up to the 6th year of life and specially during the first half of that, that the liver grows greatest. In this country, as also in foreign lands, liver disorders are most commonly seen too, during these 6 years and were it not for the fact (as has been pointed out by McNee, Rolleston and others) that the liver has, as a matter of fact, extraordinary powers to regenerate and compensate for injury done to it—liver-diseases would have generally been of much more common occurrence. Considering the immensely larger chances too of injuries and insults to liver in a child in this country—due particularly to the widely prevalent both enteral and parenteral infections—its disorders really appear to be much oftener witnessed here too.

The common abnormalities of the liver include displacements, congestions, inflammations, cirrhotic changes and more rarely necrotic changes. The last two excepting perhaps the so-called infantile hypertrophic biliary cirrhosis are perhaps more commonly seen in grown-up people. In the matter of diagnosis of all liver diseases, four items of observations help us most,—(1) A careful physical examination of the organ with a view to find out deviations from normal position, character of its contour and surface and consistency, tenderness, etc. (2) Blood examination with a view to determine infective agents, *e.g.*, leishmania, malaria, etc., Van den Bergh test and anæmia, etc. (3) Looking for collateral signs and symptoms relative to digestive system, the nervous system, rise of temperature, etc., sallowness of skin, dark marks under the eyes, jaundice, hæmorrhages, ascites, failure of general nutrition and of growth, etc., etc. (4) Examination of fæces and urine for deviation from normal and special blood and urine examination for functional efficiency of liver, *e.g.* the lævulose tolerance test.

It would not be possible for me to discuss the very important topics included in the lot of examinations under items 2, 3 and 4 here. Much of their merit is after all well recognised and professional brethren, I presume, do not fail to have recourse to them as much as they find possible. There are points, however, under item No. 1, 'Physical Examination,' whose significance, I feel, needs a reminder to them. I feel that these are perhaps not so well-remembered by many, but when remembered would help diagnosis very much without the aid of laboratory examinations, which may not be readily available in many places and also help prognosis and treatment. In the matter of physical examination I would say at once, that simply because the liver is felt extending below the ribs to a considerable extent in a juvenile it does not alone make any point to suspect a pathological state about it.

I would point out that normally in the new-born the liver is found to extend down to about 1 c.m. above the umbilicus in the mid-abdominal line and to 1·5 above the iliac crest. As early as 1908, Cruchet and Serege reported after an examination of

160 cases that after birth the inferior margin of the right lobe rapidly ascends and approaches the right costal margins until the second year when it again begins to descend until about the middle of the second period of childhood (juvenile period). After this time a second period of ascent occurs ending in adolescence with the right liver-margin at the usual normal adult position (costal margin). We can see too from a graphic as well as a diagrammatic representation made by Scammon based on Cruchet and Serege's findings about the position of lower margin of the liver in childhood, that at birth the liver extends to about half an inch above the umbilicus. It then ascends upwards during infancy (meaning the first year of life) and in the second year, the lower margin of the right lobe is in the costal line and that of the left lobe is about the middle of the xiphoid where this lobe joins with the right lobe. Following the end of infancy, that is to say, from the second year, the liver margin begins to descend downwards again, till about the 6th year, which is really about the middle of juvenile period of life, the whole juvenile period being 2nd to 12th year. By this time, namely by the 6th year, that is to say, soon after the child finishes its toddler or pre-school age, the right lobe reaches a point about midway between the costal margin and the umbilicus in the right umbilico-mammary line and the left lobe extending down to about half the length of the xiphoid below it in the mid-line. This position is practically maintained steady till the onset of puberty. Now follows the second period of ascent commencing just about the onset of puberty (that is to say, at about 12 years of age) and the ascent goes on over the entire pubescent period, namely 3 or 4 years (12th to 15th year), and the adult position is acquired by the onset of adolescence, *i.e.* at about 15 years of age. The margin of the right lobe now comes to the costal margin and that of the left about one's own hand's breadth below the costal angle.

It is, however, admitted by many that the topography of liver in the child up to the end of juvenile period occasionally varies much. Cruchet and Serege speak of having found greater variation of the topography of the right lobe than of the left. Scammon suggests that the descent of the right margin after the first year is possibly due in part to a change from a milk to a mixed diet, which has been shown to increase the volume of the liver and in part to the effect of gravity after the erect posture becomes habitual. According to him the reasons given are really physiological as well as physical. The second ascent, it seems, is an adjustment in relation to other growing bodily parts in the vicinity which also undergo a variation in their moulding at the same time. Referring to the variation of the topography of liver in childhood, I would quote here three cases of a famous old pediatrist of England, Dr. Hutchison. He writes " One meets occasionally with cases of enlarged liver in which the cause of the condition is quite obscure." He speaks of three instances:—

" Alice F.—aged one year and four months. Swelling of abdomen for two months, but otherwise well, except for slight bronchitis. No family or personal evidence of syphilis.

On examination, a healthy-looking child with a prominent abdomen. Liver uniformly enlarged, reaching fully to umbilicus, smooth. No ascites—spleen not felt.

Two years later the liver was found to be practically normal in size.

Eric V—aged 1½ years. Enlargement of abdomen for three or four months, health otherwise good. On examination, slight rickets, but otherwise healthy and no sign of syphilis. Liver reached below umbilicus, smooth, firm. Spleen not felt. No ascites.

The liver gradually got smaller, and eight years later it was only one finger's breadth below costal margin.

In another case I was able to follow the patient for 15 years and watched the liver gradually recede from the umbilicus to the costal margin.

What the nature of the enlargement is in these cases I am unable to say."

All these show that enlargement or for the matter of that a sub-costal position of the liver in early childhood is not alone a criterion to suspect or determine a pathological state in respect of it, but that there must be other clearly definite pathological criteria to make one entertain such an idea. I may at once add here that one of Dr. Hutchison's cases might after all have been extraordinary enlargement of liver due to physiological causes, in late childhood.

The pathological criteria that I am here specially referring to, can be much determined chiefly by palpation, best preceded by a light percussion to know the whereabouts of the liver to start with. The normal liver is quite smooth and fairly soft—

the margin being quite thin and hardly palpable. The organ is never rough or turgid to the feel. If hard pressed, it is a bit tender, otherwise not.

Now to deviations from normal in different cases:—

(1) In displacements as in hepatoptosis or congenital dislocation which is after all an extremely rare thing—the feeling remains the same and there is no increase in normal tenderness.

(2) In displacement due to pleural or pericardial effusions—it is slightly more tender and particularly so when there is cardiac depression with an accelerated pulse and then the feeling may be firmer though there is no alteration in respect of smoothness. In rickets, which we rarely see here, the liver is a bit displaced downwards and perhaps a bit more tender than normal.

(3) In mitral insufficiency with failure of compensation as also in any kind of progressive cardiac weakness as in epidemic dropsy or diphtheria, the liver becomes quite turgid with a firmer feeling and very tender.

(4) In fatty infiltrations, not unoften seen in chronic pulmonary inflammations, tubercular or otherwise produced, it is also firmer and a bit more tender than normal.

(5) In congestions and hepato-cholangitis which are most commonly seen in early childhood—the feeling becomes turgid. And in proportion to the extent of turgidity the sharp thin edge becomes more or less rotund and there is increased tenderness, the feeling is yet smooth.

(6) In cirrhosis—syphilitic or otherwise produced and in atrophic or hypertrophic portal, biliary or other varieties (incidentally the biliary hypotrophic type is oftener seen by us here) also in necrosis which is very rarely seen and might casually occur on top of cirrhotic changes, the feeling is rough and much firmer—but there is not much increase in tenderness except in necrosis of the colliquative type, namely abscess when it is quite tender.

If we keep in mind all these points that I have now sketched—all to be elicited by palpation alone, we can form an opinion for ourselves whether the organ is pathological or not and can then eventually confirm on the evidence of further relevant enquiries, examinations and laboratory tests.

I would here speak a few words relative to the topic of what I might say clinical prophylaxis of a large number of common liver cases pointing to a very important and very common thing in children, which is commonly called 'liverishness' which usually comes on, after an initial attack of diarrhœa or vomiting or both, followed by lack of appetite, constipation, pale motions and rather high coloured scanty urine, sometimes slight rise of temperature, sleeplessness, irritability with or without sufficient palpatory evidence about the liver. The condition must always put us on our guard, for if left uncared for, graver things develop before long. And we should surely be on our guard, if we remember (and remember always) the more important functions of the liver and its external product, the bile, these being (1) that the liver changes the saturated fatty acids which we take in our food into unsaturated ones which are thus readily oxidised, (2) that the liver stores most of the ingested carbohydrates as glycogen which gets readily changed into glucose (the most necessary yet the most readily and most easily oxidisable food of the body) by the action of amylase of the liver for maintaining the blood sugar level constant, (3) that the liver alone oxidises the ammonia fraction of our protein food into urea and that the ammonium unless so changed soon gets changed into ammonia salts which are 40 times more toxic than urea, (4) that the liver with lungs, spleen, and kidneys shares considerably in the function of arresting and destroying many varieties of microbes and further the liver excretes out many endogenous and exogenous toxins and poisons—mineral and organic—both kinds, (5) that bile (or rather its salts) double the amylolitic power of pancreatic juice and succus entericus and that their lipolytic action too, is very largely increased by the same. Liverishness being often an early stage of liver-disorder where it is yet chiefly functional, adequate treatment whether by alkalies, grey powder, rhubarb, partial starvation with glucose feeding or by any other means which the physician might choose and consider necessary, must have to be instituted without delay and a watchful care kept up. From the brief summary of the more important functions of the liver and the bile sketched above, it is also clear that liverishness left uncared for, soon makes the child suffer from failure of general nutrition making the ground suitable for the development of complications of an infective nature. That also makes a special reason for a prompt, speedy and watchful treatment.

THE CONCEPTION OF THE NERVOUS SYSTEM IN ANCIENT INDIA

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The modern Western scientists cannot but recognise that a fair amount of scientific and medical knowledge prevailed in the East and especially in India in the early centuries of the Christian era. This has been amply proved by distinguished authorities like Sir P. C. Roy in his ' History of Hindu Chemistry,' Sir B. N. Seal in his ' The Positive Science of the Hindus ' and many other distinguished writers. So it is not at all surprising to find Dr. A. F. Rudolf Hoernle acknowledging these facts in the preface of his well-known book ' Studies in the Medicine of Ancient India ' in the following words :—

" Probably it will come as a surprise to many, as it did to myself, to discover the amount of anatomical knowledge which is disclosed in the works of the earliest medical writers of India. Its extent and accuracy are surprising,....."

So also Dr. E. H. Lewis in the course of a lecture at the Annual General Meeting of the Lancashire and Cheshire Branch of the British Medical Association, which has been published in the *B.M.J.*, Nov. 10, 1934, said :—

" .....something was known of the spinal cord. The central canal with its continuation with the lateral ventricles of the brain, the cerebral convolutions and the distinction between white and grey matter, for instance, were indicated in the *Shiva Sanhita.*"

But there is no denying the fact that inaccuracies and misrepresentation of facts are also found in abundance in the old Ayurvedic and other scientific literature. According to Mahamahopadhyaya G. N. Sen, these are due to the loss of the original texts through impracticability, if not through neglect of dissection etc. (*vide*, *Pratyaksha-Shariram*, Introduction), which was so emphatically advocated by Susruta and others as a preliminary to the practice of surgery (Susruta, *Sharirasthana*, Ch. V). A typical example of this confusion may be cited in the fact that *shira*, *dhamani* and *narhi* have all been used synonymously to mean arteries, veins and nerves, indiscriminately. Nevertheless, it is not at all difficult to spot out which is which from the texts if they are carefully gone through and thought over. Nowadays the word *nahri* is used exclusively to imply nerves and as the Mahamahopadhyaya suggests, is probably derived from the same source as neuron (Greek) or nerve (English).

Clear references of the nervous system are found in the well-known medical and surgical treatises as Charaka, Susruta, Bagabhata, etc., and also in the Tantric and Yogic literature, the latter attempting to describe elaborately the different parts of the central nervous system, such as the brain and the spinal cord, and also the sympathetic system consisting of chains of ganglia and different plexuses of nerves.

This paper is only an attempt to correlate facts that are scattered over the works of different authors of old so that some idea may be formed as to how far the anatomy and physiology of the nervous system progressed in India in days of yore.

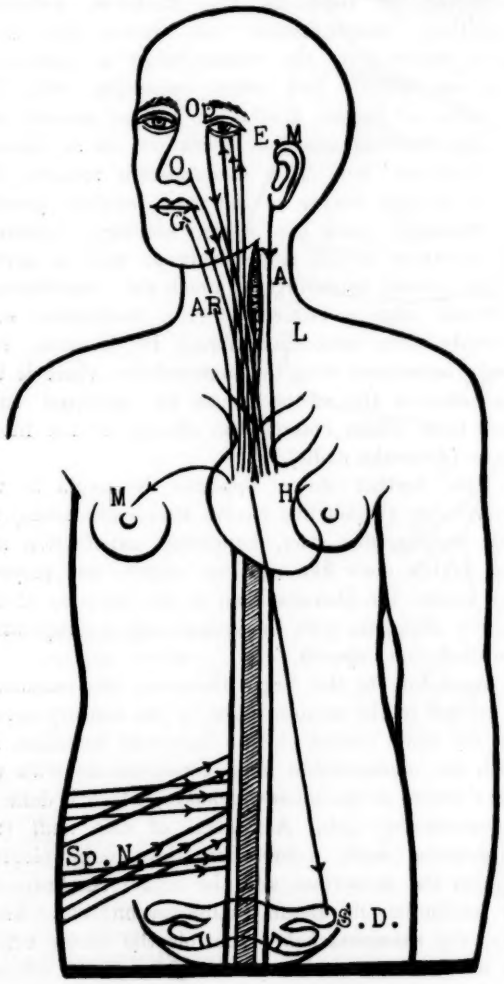
Anatomy and Physiology in Charaka, Susruta and other Contemporary Literature

The heart was supposed to be the central organ for not only pumping blood throughout the body but also for transmitting and receiving nervous impulses.

From the heart ascend some cords that divide into thirty divisions, of which ten or five pairs are arteries, veins, etc., for carrying vital fluids like blood, lymph, chyle, etc., while twenty others or the remaining ten pairs act as the nerves. Of the latter, four pairs are the sensory nerves that carry the impulses from the eyes (optic), ears (auditory), nose (olfactory), and tongue (gustatory nerves) that bring the special sensations of sight, hearing, smell and taste to the heart. The rest six pairs which are mixed nerves are mainly motor in their function, three for the working of the eye-muscles, one for the muscles of articulation, one for the larynx and the last to the mammary gland in the female for the secretion of milk, and to the seminal duct in the case of males for the secretion of the seminal fluid. Besides these specialised functions, these nerves are also supposed to carry impulses which produce sobbing, sighing, yawning, smiling, laughing, etc., the sensory part being responsible for the crude sensa-

tions like thirst, hunger, etc. There are in addition twenty spinal nerves which divide and subdivide to

DIAGRAMMATIC SKETCH OF THE CONCEPTION OF THE NERVOUS SYSTEM AS FOUND IN THE CHARAKA AND SUSRUTA.



H—Heart, Op—Optic Nerve, O—Olfactory Nerve, A—Auditory, N.G.—Gustatory, N.A.R.—Nerve for articulation, E.M.—Nerves to eye muscles, L—Nerve to laryngeal muscle, M—Nerve to the Mammary gland, S.D.—Nerve to the Seminal duct, S.P.—Spinal Nerves.

form plexuses and ramify ultimately as fibrillæ around the pores of the skin for the excretion of sweat. They also carry the internal as well as the external cutaneous sensibility to the heart.

From the above description it is well evident that the functions of the afferent and efferent nerves were not unknown. Nerves of special and general sensibility were also well defined. Two types of cutaneous sensibility were known as external and internal which were probably the homologues of the epicritic and protopathic (deep) sensibility respectively. The efferent functions were also divided into two parts (i) purely motor and (ii) secreto-motor functions. There was also some idea about the interrelationship between the sex gland secretion and the mammary gland as is evident from the text **"द्वे स्तनसंश्रिते, ते एव शुक्रं नरस्य स्तनाभ्यां अभिवहतः"** in the Susruta, *Sarirasthana*, Chap. IX. The secreto-motor function of the cutaneous nerves was also not unknown. Even the nerve fibrils, that were said to be as minute as the thousandth part of a hair, were conceived of and traced to their final distribution around the pores of the skin. Various nerve plexuses all over the body were also clearly dissected out. But in spite of all these surprising accuracies in the anatomical and physiological knowledge, perhaps the most outstanding blunder was committed in the conception of the heart as the central organ of the nervous system, and even the seat of consciousness. Even a man like Aristotle, the great Greek philosopher, we are surprised to find, held the same erroneous idea about the heart as the centre of consciousness. This was probably due to some inter-communication between India and Greece in days of old, which led the intelligentia of both the countries to a common mistaken belief. The world with all its progress in science has not yet been able to shake off that mistaken idea about the heart as is well evident from the expressions like ' to get by heart,' ' to learn by core ' to mean memorizing or committing to memory. But we must not be slow in allowing some latitude as Dr. Hoernle suggested "for their early age—probably the sixth century before Christ and their peculiar methods of definition." The knowledge of anatomy though advanced to some extent, was by no means perfect and probably this gave rise to highly speculative physiology.

CONCEPTION OF LATER WRITERS, BAGABHATA, BHAVAMISRA AND OTHERS

The ideas of Charaka, Susruta and their contemporaries held the ground for many centuries. Later writers like Bagabhata, Bhabamisra and others had not the opportunity of dissecting the human body for themselves, as it was prohibited by Emperor Asoka the Great, by a Royal edict (*Journal of the Asiatic Society*, Vol. II, p. 261), which as Dr.

Puschnann says " was in the first centuries of the middle ages, opposed by religious and political ordinances and also by social prejudices " not only in India but even in Europe (History of Medical Education). They were also not fully conversant with the meaning of the old writings that were partially lost and as such indulged themselves in a fanciful and speculative description. So it is not possible to gather much reliable materials from their writings.

The Conception as we find in the Tantric and Yogic Literature

The scientific knowledge was again revived in the Tantric literature and in the writings of Dallana, Chakrapani, Sree Kant and others who flourished probably between 900 and 1200 A. D. and we are surprised with the extent and accuracy of knowledge of not only of the central but also of the sympathetic nervous system contained in them. Probably the ban on dissection of human bodies was relaxed then and the scientists of the age availed themselves of the opportunity.

In the Tantric and Yogic writings the brain or rather the cerebro-spinal nervous system has been described as the seat of consciousness. The same idea was also shared by the Greeks of the same age, as is found in the Galenic literature. According to the Tantras " the soul (the *Jiva*) has its special seat within the *brahmarandhra* above the foramen of Monro and the middle commissure but traverses the whole cerebro-spinal axis up and down along the *susumna* (the central canal of the spinal cord). The *brahmadanda* (the vertebral column) contains the *susumna*, the *brahma nadi*, and the *manovaha nadi*. The cerebro-spinal axis with the connected sympathetic system contains a number of ganglionic centres and plexuses (*chakras, padmas*) from which nerves (*nadis, siras and dhamanis?*) radiate over the head trunk and limbs." (Positive Science of the Ancient Hindus, By B. N. Seal, Sec. 4).

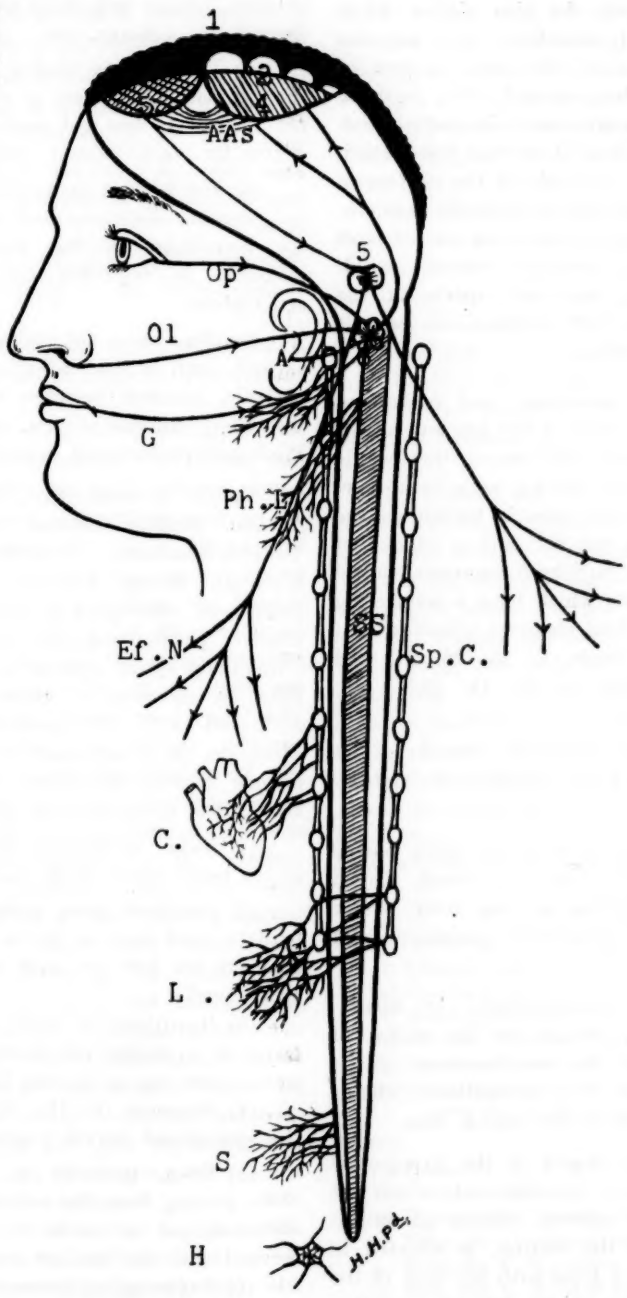
The Tantras describe the cerebro-spinal axis situated inside the cranium and the vertebral column (*brahmadanda*) as resembling the figure of an ' inverted gourd ' (the brain) with a branched stem (the *susumna* or the central canal of the spinal cord, being the central stem). The cerebro-spinal system as a whole was regarded as the vehicle of consciousness (*manovaha nadi*). The *sahasrara chakra* (or the thousand lobed), the uppermost convoluted layer of the brain was reckoned as the seat of *jiva* or soul for all higher specialised functions as judgment and perception of a superior order (realisation of God etc.). Below this was the *somachakra* (a ganglion with sixteen lobes), the middle layer of the cerebrum responsible for functions like kindness, patience, meditation, determination, etc. Below the *soma chakra* comes next the *manaschakra* or sensorium (with six lobes), five lobes connected with the perception of senses, special as well as general and one for the subconscious sensations as in dream, hallucinations, etc. This *manaschakra* receives the special sensory nerves as the *rupa, shabda, gandha* and *rasavaha nadis* (the optic, auditory, olfactory and gustatory nerves respectively as well as nerves for the general sensibility of touch etc. (*sparshavaha nadi*) and also a branch of the *manovaha nadi* (probably some association fibres) for dreams, etc. Closely associated with the *manaschakra* there is the *ajnachakra* or the motor centre for volitional command from which emerge the efferent or the motor nerves (*ajnavaha nadis*).

Still further down opposite the uvula is the *lalanachakra* (which has twelve leaves like lobes) for crude feelings like grief, happiness, satisfaction and some higher ones like egotism, regret, and respect. Then comes the *bharatisthana* or the junction of the medulla oblongata with the spinal cord, for regulation of articulation, speech, etc.

According to the Yogic literature the sensations are carried to the *manaschakra* by the sensory nerves but this alone cannot elicit a conscious sensation for which the *manaschakra* must communicate with the higher centre or the *sahasrarachakra,* which is done by the *manovaha nadi.* A branch of this *nadi* (the *swapnavaha nadi*) establishes the communication between the sensorium and the higher cerebrum for the production of dream, hallucination, etc. Similarly, the *sahasrarachakra* controls the motor centre too in the transmission of the passages of efferent impulses to the periphery. Functions like self-will and determination are complex in nature and require the co-operation of the *manovaha nadi* with the *ajnavaha nadi* through the sensory and motor centres. Similarly judgment, discrimination, etc., require a connection between the higher centre (*sahasrara*) with the *manovaha nadi* for the conscious effort on its part.

Shankar Misra (Upaskara, on sutras, 14, 15, Chap. V) is of opinion that the nerves are themselves sensitive and the tactile fibres carrying the sense of inner touch to the sensorium regulate the

DIAGRAMMATIC SKETCH OF THE CONCEPTION OF THE NERVOUS SYSTEM AS WE FIND IN THE TANTRIC AND YOGIC LITERATURE.



1—Sahasrara Chakra.
2—Soma Chakra.
3—Ajna Chakra.
4—Manaschakra.
As—Association fibres.
5—Lalana Chakra.
6—Bharatisthana.
Op—Optic Nerve.
Ol—Olfactory N.
A—Auditory N.
G—Gustatory N.

Ph.L—Pharyngeal and laryngeal plexuses.

S—Susumna.
Sp.C—Ida and Pingala.
C—Cardiac Plexus.
L—Lumbar Plexus.
S—Solar Plexus.
H—Hypogastric Plexus.

voluntary as well as the involuntary motor activities. The involuntary automatic activities like digestion and assimilation of food and drink are always associated with some sort of crude consciousness as there is inter-communication between the fibres of the tactile with the autonomic nerves (*pranavaha nadi*).

The *sushumna nadi* or the spinal cord (situated inside the *brahmadanda* or the vertebral column) has got two parts, the anterior and the posterior. The

former division goes towards the *ajna chakra* while the posterior governs all sensations and supplies nerves to the vital organs of the body, a part of which is not under voluntary control. The posterior end or the mouth of the *sushumna* is situated centrally in the first *chakra* (plexus of nerves) from which the nerve runs up, passes through all the centres of energy till it reaches the cerebrum inside the cranium. It is through this *sushumna nadi* that one obtains knowledge of his relations with the external world. Not only *sushumna* but also other parts of the cerebro-spinal system are well developed as regards its response to external stimuli.

On either side of the *sushumna* and embracing it is a sympathetic chain. *Ida* or the left one begins just below the left nostril and passes downwards slightly lower than the left kidney as a bent bow. The similar one on the right side is known as the *pingala*. A knowledge of the self and a control of the vital organs is possible only by a conscious control of the *ida* and *pingala nadis* which form a connecting link between the prevertebral plexuses (*chakras*) and *sushumna* (Lord Siva's Book, ii, 25, 26, 27, and The Mysterious Kundalini by B. G. Rele, pp. 21-24).

There are some such plexuses formed by the fibres from the spinal and the sympathetic system. They are,

(1) The *adhara chakra* or sacro-coccygeal plexus with four branches. It is situated about eleven fingers below the *bhanubhaban* or the solar plexus which is responsible for pleasurable sensations and mass organic reflex.

(2) The *navikanda*, *brahmagranthi* or *bhanubhaban* (the solar plexus), located in the region of the navel, is formed by the interlacement of the fibres of the right and left sympathetic chains (*pingala* and *ida*) with the cerebro-spinal axis.

(3) The *svadhisthana chakra* or the hypogastric plexus with six branches, the fibres of which are continued to form the *adhara chakra* (described above) on either side of the rectum, is situated in the pelvic region just on a level with the root of the penis. This regulates the sexual feelings, together with emotions like contempt, suspicion, cruelty, etc.

(4) The *manipuraka* or the lumbar plexus with ten branches, formed by the branches of the sympathetic chains, is concerned with the production of sleep, hunger and thirst and expressions of passion like shame, jealousy, etc.

(5) The *anahata chakra* or the cardiac plexus of the sympathetic system is situated in the region of the heart. It has got twelve branches and is the centre for hope, anxiety, self-esteem, etc.

(6) The *bharatisthana* which is the junction of the medulla oblongata and the spinal cord, is also the homologue of the pharyngeal and laryngeal plexuses. It regulates the organs of voice and articulation.

Besides, there are homologues of other plexuses as well, such as the cavernous plexus of the sympathetic, situated between the eyebrows, supplying the ciliary muscles of iris, etc. (Sangita-ratnakara, Pindotpattiprakaranam, verses 110-114).

Sir B. N. Seal (The Positive Science of the Ancient Hindus, Section 6), from texts in the Sangita-ratnakara, Swaradhyaya, Pindotpattiprakaranam, Slokas 144-156, and also from the Yogarnava, attempted to give a rough idea of the relative position of the principal nerves of the sympathetic-spinal system by a diagrammatic plan. There is mention of seven hundred nerve-cords connected with the sympathetic-spinal system of which the most important are the *sushumna*, *ida* and *pingala* already described, and eleven others. Sir B. N. Seal recognises the following:—

(1) *Kuhu*, situated to the left of the spinal cord as the pudic nerve of the sacral plexus.

(2) *Gandhari* lying posteriorly to the left sympathetic cord as a nerve of the cervical plexus that connects the left eye with the left foot through the spinal cord.

(3) *Hastijihva* in front of the left sympathetic chain as a similar one stretching from the left eye to the great toe of the left foot.

(4) *Saraswati* to the right of the *susumna* as the hypoglossal nerves passing to the tongue.

(5) *Pusa*, posterior to the right sympathetic chain passing from the corner of the right eye to the abdomen, as a chain of nerves connecting the cervical with the lumbar nerves.

(6) *Payasvini* in between the *pusa* and *saraswati* as the right auricular branch of the cervical plexus.

(7) *Sankhini* lying between *gandhari* and *saraswati* as the same as (6) on the left side.

(8) *Jasasvini* in front of the right sympathetic chain from the right thumb to the right leg, as the

radial nerve of the brachial plexus communicating with some of the branches of the sciatic nerve.

(9) *Virana* lying between *saraswati* and *jasasvini* as the nerves of the sacral plexus distributed over the lower trunk and the limbs.

(10) *Visodhara* between the *kuhu* and *hastijihva* as the nerves of the lumbar plexus distributed over the same regions.

(11) *Alambusa* as the coccygeal nerves proceeding from the sacral vertebræ to the urino-genitary organs.

Sir B. N. Seal's description of these nerves is so complete that it scarcely requires any further elucidation.

When we go through these texts we cannot but wonder at the amount of knowledge the Hindus had in anatomy and physiology in the mediæval period when the rest of the world was still groping in the dark, either quite ignorant of or full of all sorts of queer and mistaken ideas based on superstition or equally bad pseudo-religious zeal. What the Hindus knew and preached, was certainly not all correct but the credit of being pioneers in the scientific and especially medical knowledge in that dark age must needs go to them. They were not very far from truth in their conception of the different layers of the cerebrum and localisation of the functions therein. Such is also the case with that of the spinal cord, the sympathetic chains and the numerous plexuses formed by the cerebro-spinal and sympathetic systems. The connections between the different parts of the nervous system by nerves and association fibres were also known to some extent. The situation of the vital centres in the medulla oblongata and functions of the thalamic region (probably *lalana-chakra*) were also vaguely conceived. The enumeration of the spinal nerves with their connections with the sympathetic system was surely a distinct improvement on the anatomists of the older days (Charaka and Susruta) and surprisingly approaching our modern knowledge of the twentieth century.

I shall finish with a word or two regarding the idea about the automatic reflex activities that existed in India in days of yore. In the Charaka and Susruta we find the mention of *vayu* (or the prime-mover) as the impelling force which sets the organs and mind in motion, evidently meaning thereby the involuntary reflex activities. In the Charaka (Sutra-sthana, Chap. XII) and Susruta (Nidanasthana, Chap. 1) five such forces are mentioned, as *prana*, *udana* *samana*, *vyana* and *apana;* the first for deglutition, respiration, phonation, etc., the second for maintenance of posture, singing, etc., the third for digestion and assimilation, the fourth for the circulation of blood and lymph and the last for the urino-genital activities.

In the period of the Tantras and Yoga, no less than forty-nine such *vayus* are recognised of which besides the five mentioned by Charaka and Susruta, the other five important ones are *Naga*, *Kurma*, *Krikara*, *Devadatta* and *Dhananjaya* for retching and vomiting, reflex movements of the eyelids, hunger and thirst, yawning and dozing, and coma, fits, etc., respectively (Sangita Ratnakara, summarised in Sangita Darpana, Raja Sourindra Mohan Tagore's edition).

That these automatic forces are not under the control of the volitional centre and are involuntary, pure and simple was thoroughly recognised. The effect of the automatic activities was definitely known though the cause was not properly recognised. But still we cannot but feel proud to find that our ancestors of the medieval age could know of things which was revealed to the rest of the world no less than six hundred years later. It is a pity that much of the valuable literature is lost by aggression of man and nature repeatedly for more than two thousand years, otherwise there is no doubt that India could have contributed a lot from her own book of knowledge to the domain of modern science.

BIBLIOGRAPHY:

Ancient Literature

(1) Charaka-Samhita.
(2) Susruta-Samhita.
(3) Siva-Samhita.
(4) Astanga Hridayam (Bagbhata).
(5) Upaskara (Shankar-Misra).
(6) Shangita-Darpana with Summary of Shangita-Ratnakara (edited by Raja S. M. TAGORE).

Modern

(1) HOERNLE, A. F. R.—Studies in the Medicine of Ancient India.
(2) PUSCHANANN—History of Medical Education.
(3) RELE, B. G.—The Mysterious Kundalini.
(4) ROY, SIR P. C.—History of Hindu Chemistry.
(5) SEAL, SIR B. N.—The Positive Science of the Hindus.
(6) SEN, MAHAMAHOPADHYAYA G. N.—Pratyakshya-shariram.

Periodicals

(1) *British Medical Journal* (Speech by Dr. E. H. Lewis), November 10, 1934.
(2) *Journal of the Asiatic Society,* Vol. II.

PREVENTION OF TUBERCULOSIS

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Tuberculosis is a universal disease, found in every part of the world, in every race of man and in every historical age. It was known by various names among all the ancient civilised nations. The earliest medical writings of the Greeks present an unmistakable picture of tuberculosis. Reference to its ravages are found in the cuneiform tablets among the remains of Babylon. It was known among the Egyptians many centuries before the Christian era. Bones of Egyptians as seen in the museum of the Royal College of Surgeons, London, and the skeleton of Egyptian mummies examined by Dr. Derry and Elliot Smith give evidence of the presence of tuberculous disease in those remote times. Sir Hemand Ruffer demonstrated tubercle bacilli in tissues in mummies from the Herst collection at Cairo. In the works of Charaka and Susruta, the Indian physicians of classical fame, we find a more or less detailed account of the disease, its complication, and treatment of patients with animal food, butter and goat's milk.

Hippocrates described it as a febrile disease occurring mostly between the ages of eighteen and thirty-six and as due to some constitutional change which he called " phthisical diathesis." Socrates, his contemporary, and Aristotle believed in its communicability. In other words it was known and recognised by the ancients as far back as the years 460-377 B. C. But coming to more modern times we find that the names of Lænnec, Villemin, and Kock stand out pre-eminently in the investigation of the causation of this disease, and it is chiefly due to the labours of these three eminent scientists that we owe the discovery that tuberculosis is an entirely preventable disease.

Prevalence of Tuberculosis at the Present Day

At the present day tuberculosis is widely distributed in every part of the earth, in every race and climate among the rich and poor, the old and young, male and female, and man and animal. It prevails in all civilised lands. In Europe it is reckoned that almost every human being is affected with tuberculosis at some part of his life. It is most fatal of all infectious diseases and is responsible for about a seventh of the world's total mortality. More than half of its victims fall in the very height of manhood, and womanhood. Once called the White Plague from its being chiefly found among the white races, it has spread among almost all the dark inhabitants of the world and has well-nigh decimated some of the primitive races by its ravages. No wonder so universal a disease involving the lives of millions of people has commended the serious attention of both medical profession and the general public.

It is realised to-day that tuberculosis is not solely a disease of medical interest but that it has a wide sociological and economic significance. Hence in combating tuberculosis there must be a general marshalling of forces, both medical and lay.

The most successful method of combating tuberculosis is prevention, whereby the individual is put in the best position to avoid and to resist tubercular infection. The second line of defence is detection of tuberculosis at the earliest possible moment, and prompt application of all the resources of medical art, science and experience.

The problem of tuberculosis is one of the most urgent which all nations of the world have to face to-day. In spite of what has already been accomplished in organised prevention and treatment, this disease claims its tens of thousands of victims every year. Along with heart disease and pneumonia, tuberculosis is one of our greatest killers. And yet tuberculosis is acknowledged by all experts as one of the most curable and most preventable of all diseases.

Surely this is a most tremendous indictment of the health organisation of the twentieth century. Here we have a disease which is essentially preventable yet it is not prevented. Obviously, there must be many loop holes in the health defences, both of the community and of the individual. Economic factors play a significant part but a failure in individual effort through lack of knowledge of the means of

prevention is the real weak point in the defence system. Public opinion has not been sufficiently awakened to this peril in our midst. It has not yet penetrated the popular mind that the present prevalence of tuberculosis is a perpetual menace to the life and happiness of every person—man, woman and child.

It used to be thought that tuberculosis is a hereditory disease, for it was observed to run in families. Actually, the disease is never inherited, but a constitutional predisposition may be handed on from generation to generation.

As in the case of most germ diseases the germ is not the only factor; we have always to consider the health and natural resisting powers of the human body. In the case of tuberculosis there are certain definitely recognizable types who have a susceptibility to tubercle bacilli. These types have inherited a constitutional weakness which makes them a comparatively easy prey to the ubiquitous tubercle germs. At the same time not seldom do we find that persons whose appearance gives no hint of vulnerability and whose family history is free from any record of the disease succumb to infection. In such instances, however, there is always evidence that the natural resistance has been lowered by such causes as fatigue, exhaustion, the privation of poverty or war and by illness such as influenza, whooping cough, measles, diabetes, malaria, etc.

Sir William Osler, the famous English physician, gave a very clear illustration of the relationship of the tubercle germs to the production of disease in his adoption of the parable of the sowers. " Some seeds fell by the wayside and the fowls of the air came and devoured them up. These are the bacilli scattered broadcast outside the body, an immense majority of which die. Some fell upon stony places. These are the bacilli which find lodgement in many of us, but nothing comes of it. They wither away, because they have no root; some fell among thorns and the thorns sprang up and choked them. This represents the cases of tuberculosis in which the seed finds suitable soil and grows but the conditions are not favourable as the thorns representing the protective forces of the body, get the better in the struggle. But others fell on good ground and sprang up and bore fruit a hundred fold—the soil suitable, the protecting forces feeble."

When we consider how inevitably we must all be sprayed by tubercle germs from the coughs and expectoration of infected persons the wonder is that any of us ever escape. Indeed, there are physicians who believe that nearly every one has suffered from a tuberculous lesion at some time or other, but that, in the majority of us, our immunity being sufficiently strong, the disease is conquered before it gets hold.

Any consideration of the control and prevention of this great white plague must be governed by an evaluation of what we may call the seed and the soil factor, in other words, the relation of tubercle germs to the constitution of the individual. It does not take much imagination to grasp that if a child of poor parents living in an overcrowded room, bottle fed, on inferior quality milk and denied fresh air and sunshine is infected with tubercle bacilli from any source, the chances of overcoming infection are small, even though there is no special predisposition to the disease. The soil is here fertile for the reception of the seed and tragedy looms ahead for that child. In the same way, an adult whose health has been persistently undermined by inadequate and incorrect dieting and by self-poisoning of constipation, who spends the greater part of the day and night in a vitiated atmosphere and who never exercises his lungs, such a person is preparing a soil fit to nourish the hostile bacilli.

On the other hand, the parent who brings up his children to keep the ordinary laws of hygiene, who sees that they are clean in body and habit and suitably and properly fed, who encourages them to take proper and regular exercise to live in fresh air and to avoid overstrain and exercises, is unconsciously fighting tuberculosis more successfully than the skilled physician who treats the patient in whom tuberculosis has already appeared.

Taking into account the prevalence of this most disastrous malady into every part of our city, it is my duty to bring this fact to your notice.

Karachi is an ideal health resort, where rainfall is very little, there is an abundance of fresh air, and sunshine, fine hot and cool bracing weather at least for nine months of the year. In fact, nature's bounty is in abundance but we are not taking advantage of it. We claim, however, to be looked on not only as a progressing city generally, but as a city more especially progressive in the direction of sanitary improvement. This progressive city abounds in tuberculosis.

It is therefore important to investigate the causes of this terrible scourge of our population. Few

diseases cause more sorrow or more misery. None creates more sympathy for the sufferer and the sufferer's family and relatives. Pain and distress it invariably produces and these too are often aggravated by the advent of a fresh increase of poverty; the sick person will no longer be able to earn wages and the cost of his maintenance will become an additional charge on the family income. As we know the young are peculiarly liable to contract the disease and every one of us must realise what a sad and distressing thing it is that such members of our young people should be thus stricken down on the very threshold of life.

With regard to the number of persons suffering from consumption which is recorded to be about 10,000 it is quite evident that the number of actual sufferers is much more than this figure. The loss to the city industrially by the diminution to its wealth producing capacity owing to the prevalence of this disease amongst the labouring classes is very heavy indeed.

Scientific men have made a special study of these matters and are unanimous in declaring that the vital forces of a healthy person are well able to overpower and defeat the onslaught of comparatively small number of this enemy, but that these vital forces are liable to be defeated by more powerful invasion.

In order to guard against consumption, we should concentrate our efforts on two great objects. First, improve the general health and strength of our people in order that their bodily forces may be strong enough to resist weak attacks and secondly, we must take whatever steps may be necessary to prevent invasion by an overwhelming number of bacilli. This being so, the next question which arises is from what sources are we to expect these overwhelming attacks.

There are two sources of infection. One source is a person who has already contracted the disease and the other source is the infection from infected food including milk, etc. The cow's milk does not form an important factor in the prevalence of tuberculosis in our city as milk is invariably boiled before use.

In order to protect the public against this danger, it is most important that the notification should be universal and systematic.

As tuberculosis is now recognised as an infectious disease it should be controlled entirely by the local authority. The tuberculosis problem is both large and complicated. Scheme of relief and prevention must, therefore, be most carefully organised and their various factors skilfully coordinated.

What should be Done to Prevent its Spread

(1) Fortify the powers of resistance of the individual to disease by sound nutrition, the practice of hygiene and where possible by immunisation.

(2) Prevent the spread of infection by means of tuberculous milk and meat as well as by contact.

(3) Pay attention to general health reform including improved housing, lessened over crowding, industrial welfare, the provision of open spaces, open air schools, open air life, school medical service, maternal and child welfare and all measures directed against disease which predispose to tuberculosis, *viz.* measles, whooping cough, pneumonia, influenza, malaria, etc.

(4) Educate the public.

(5) We must apply effectively the particular methods which are already in operation, *viz.* the Tuberculosis Scheme notification and domiciliary, and dispensary supervision, sanatorium and hospital treatment, village settlements and appropriate means of aftercare.

Besides the predisposing causes that operate in common with other civilised countries such as poverty, over-crowding, slums, under-feeding, excessive mental strain, the Indian climate, malaria and social habits and customs, the purdah system of the Indian people, have considerably helped to favour the spread of tuberculosis and heat intensifies the progress of the disease. Dust and insanitation help bacterial growth and virulence and are the two great enemies of tuberculous patients. When to these are added poor food and ill-balanced diet, we have a three-fold factor which profoundly helps the spread of tuberculosis in our city. Malaria adds fuel to the disease and is often mistaken for it. I have already alluded to the greatest prevalence of consumption amongst women in zenana many of which admit very little air and sunlight. Child marriage is a fertile cause of many a young and immature mothers falling victims to consumption from the strain of pregnancy and childbirth. The indiscriminate spitting of the careless consumptive disseminates tubercle

bacilli which, if virulent and the soil favourable, helps to spread the disease.

If the city fathers are really in earnest to give a death blow to the great scourge of tuberculosis, they must adopt far-reaching special and economic measures, such as improved housing, planning of garden, cities and colonies, diverting the migration from the town into country, developing industries, the teaching of elementary hygiene in schools, open air habit, physical culture, child welfare, medical inspection of school children; all of which by improving the general well being of the people and increasing their resisting powers would lay a sure foundation in the eradication and prevention of tuberculosis in near future.

All the above measures are intimately correlated with each other. No one measure singly is going to replace or substitute the measures above narrated. I do not say that the Corporation should launch immediately all the measures above stated but they should immediately take up the few important measures, *viz.*:—

1. Propaganda against spitting promiscuously.
2. Infant welfare centres.
3. Medical inspection of schoolgoing children.
4. Teaching of elementary hygiene in schools.
5. Isolation of advanced cases of tuberculosis.

Local authorities, who intend to make a really strenuous effort to eradicate consumption, will naturally endeavour to find a locality in which an anti-tuberculosis scheme has been worked for many years, and worked with success. If so, I am convinced that they will find what they are searching for in the city of Edinburgh; they may well take the Edinburgh system as a model for their guidance.

The " Edinburgh Plan " is a scheme for dealing with tuberculosis in cities and towns in the most comprehensive manner possible, having regard also to the important accessory factors—overcrowding, bad housing, poverty and under-nutrition. The system revolves round the Tuberculosis Dispensary which has wide spread and most important functions. In brief summary its functions comprise:—

1. The reception and examination of patients at the dispensary and the keeping of a full record of every case throughout the course of his illness. Contact is maintained with every case from the onset until his death or final discharge as a cure.

2. The selection of cases and then allocation for treatment, either at the dispensary, or at their homes, or at the sanatorium or the hospital according to the nature and extent of the disease.

3. The examination of contacts in the search for incipient cases in a " march past " of the patient's household.

4. The visitation of patients at their homes by (I) a medical man, (II) a specially trained nurse for the double purpose of (a) treatment and (b) investigation into the state of the dwelling and general conditions of life and the risk of infection to others.

5. The guidance generally of tuberculous patients and their friends and the reference of their needs to appropriate voluntary aid organization.

6. The collection of information and statistics bearing upon the incidence of the disease and the guidance of all interested persons on questions concerning tuberculosis.

The dispensary remains in close touch with the medical officer of health of the town and fits into the local public health machinery. It maintains constant contact with the other essential elements of the complete scheme—the sanatorium, the hospital for advanced cases, the working colony of tuberculosis settlement, the preventorium, rest camp or open air school; it is the nucleus round which all tuberculosis effort in the area revolves. It correlates all voluntary and official work and prevent overlapping.

This aspect of the problem which displaced the sanatorium as the most important element in the campaign rapidly won favour in all great countries and everywhere established itself as the most effective method yet devised for the organised control of tuberculosis.

The Edinburgh system is therefore designed principally for the purpose of treating patients in their own homes. it deals directly with the principal source of infection and with the environment which propagates the infection. It strikes at the very root of the evil with which we are contending. This system has demonstrated abundantly the great importance of searching for the earliest signs of tuberculosis in children. If the child can be helped in dealing with his infection during its primary or secondary stages he has a very good prospect of permanent recovery. " Early discovery means early recovery." The results of the " Œuvre Grancher "

in France of the Preventions and Forest Schools of Germany, Switzerland, Sweden and the United States abundantly demonstrate, the great value of concentrating attention on the child, " the tuberculosis seedling " as Sir Robert Philip puts it. If we can prevent that seedling from developing into a tree scattering abroad its poisonous fruit (the tubercle bacilli) we strike at the root of the problem.

One anti-tuberculosis effort in the past has been held up somewhat by the slogan cry " First eliminate slums and then you will end tuberculosis." Other single track-minded reformers insist that under-feeding and alcoholism are prime factors, surely a wide angle view of the situation includes all these proximate causes, but it realizes that these are but accessories to the main fact—the presence of the tubercle bacillus. Eliminate this bacillus and you bring the disease to a full stop. It is foolish then to allow the immensity of the task of abolishing slums and slums houses, or of checking alcoholism or sub-standard feeding of the poor, to obscess us unduly before organizing our direct attack on tuberculosis.

I now come to the second great source of infection, the tuberculous cows and consequently I invite your attention to the most important question of the milk supply of the city.

The importance of milk especially as the principal diet of young children is fully recognised by every one. Really good milk should be within the reach of every household; the supply should, therefore, be ample in quantity, rich in quality, carefully protected from every kind of impurity and procurable at a price not greater than the cost of production.

Every sort of milk adulteration should be severely dealt with as it has been conclusively proved that the feeding of children with poor adulterated milk produces weak bodies and weak brains. If we permit poor adulterated milk to be used as a diet for the young children in our city, we are doing our best to provide the largest possible number of new recruits for the great army of wasters and unemployable. We shall be actually contributing to the increase of a body of men whose large numbers, at the present moment, are a just cause of the gravest anxiety.

Above all adequate precautions should be taken to prevent the possibility of any part of our milk supply from becoming contaminated with the germs of diseases.

The point which we have to decide is whether such precautions are being taken, in a word, whether milk is safe or whether it is unsafe.

Perhaps some one will ask what sort of protective measures should be taken. My reply will be that the first elementary precautions are embodied in what is known as dairies, cow sheds, and milk shops and the next duty of every one to enforce each one of their provisions with the utmost zeal and energy.

Having discussed a few of the more important points which arise in connection with the two principal sources of tuberculous infection, I shall now invite your attention to some of the conditions of living which will strengthen the human body to resist successfully the minor attacks of tubercle bacilli.

I think you will agree with me when I say that the first thing the body requires, in addition to pure air and pure water, is a sufficient supply of nourishing food.

Would not an enormous improvement be effected in the health and strength of these people if they could only be induced to consume whole meal bread, cheese, butter, eggs, vegetables, fruits, etc., also a plentiful supply of cow's milk and butter milk should take the place of tea or coffee, especially as a diet for growing boys and girls.

There can be no doubt, however, that one of the most important factors in healthy living is the house and the manner in which the house is kept and maintained.

The mortality from consumption is unfortunately very large. We have no means of estimating with any degree of accuracy the various causes of our failure to procure a more rapid advance in this direction, but it may be confidently asserted that what really requires is a general uplifting of the standard of sanitation and nourishment.

If this terrible disease is ever to be really defeated, the sanitary authority must be aroused to a proper sense of responsibility and the whole population must be brought to realise that the only way of safety is to practise scrupulous cleanliness, to keep the air inside the house fresh and pure and to supply themselves with the most nourishing food which the money at their disposal will enable them to purchase.

I believe that it will be admitted by everyone who has studied this subject that inadequate nourish-

ment of the labouring classes is not mainly due to insufficient wages. In the great majority of cases they are well able to provide themselves with better food. No doubt they would so provide themselves if they understood the relative merits of the various foods at their disposal, and if they recognised the importance of securing the greatest possible amount of nourishment for the small possible expenditure of money.

If a substantial decrease in the cases and death from consumption is desired, there must be general improvement in sanitation, especially of an improvement in the condition of the houses. When we are considering the beneficial effects of well designed houses, we must remember that the best of houses will not conduce to health unless the interior is properly maintained and frequently cleaned.

I can only venture to suggest one method by which the sanitary conscience of the mass of our people may eventually be awakened and by which they may be brought to realise the vital importance of cleanliness, pure air and sunlight.

The method I refer to is the proper training of children in the principles of hygiene and sanitation.

It should never be forgotten that the habits of grown up people are fixed and that no amount of advice or instruction will suffice to make any great change in those habits. Children, on the other hand, are easily influenced by suitable training or teaching. Practically all the children in the city have been already captured in the schools for several hours each day of the week. There they are waiting to be instructed in the matters which influence the health and the growth of their bodies.

Let the Corporation do everything they can to supply the children with suitable instruction in these matters. Let us inform them not only how disease may be successfully avoided but also how their bodies may be built up and fortified for the battle of life. Very soon these children will become men and women; let us see that they will, then, be sound in body, physically competent to support themselves by honest labour and able to fulfil the duties of industrious and patriotic citizens.

The only hope of securing a remedy must surely rest on a suitable hygienic training of the children and on the provision and careful maintenance of well designed, well constructed school houses.

We are aiming at something of greater consequence even than the prevention of disease or than the prolongation of life—we are striving to race up a strong and a healthy generation of men and women.

Let us then press on the sanitary reforms with renewed ardour, with the most persistent resolution, with ever-increasing enthusiasm.*

*Read at the Scientific Session of the XIII All-India Medical Conference, Karachi, December, 1936.

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RACIAL DISCRIMINATION IN THE SERVICES : THE VERDICT OF THE INDIAN MEDICAL PROFESSION

We have tried to present before the profession, in the March and June issues of this Journal, a critical analysis of the recent Government of India Resolution on the usurpation of important medical and public health posts under the State for European members of the services. Our members must have been eager to know the opinion of the rank and file of the profession in this country. Medical Associations all over the country unanimously protested against this forced measure. We must congratulate the members of the Bombay, Calcutta, U. P. and Lahore Branches of the British Medical Association for expressing identical views on the matter, which are reproduced elsewhere in this issue. The Central Council of the Indian Medical Association, whose resolution is also reproduced in this issue, ratified the views of the entire medical profession at its meeting on the 23rd July, 1937. The whole scheme of the Secretary of State's Council, as expressed through the Government of India, is not based on comparative qualifications of Indian and European doctors, but entirely on a racial basis. It is thus not only reactionary, retrograde and against all sense of equity and justice but is also against the professed policy of Indianisation of the services, as is taking place in other departments of the State. We can only hope that this voice of resentment of the entire profession is taken note of by the Premiers of different provinces, the Government of India and the Secretary of State and continued efforts are made to rescind the Resolution at an early date. Our Association will always agitate against any racial discrimination in the services. We reiterate that every post under the state should be thrown open to Indians and where a suitable Indian is not available, a candidate after selection should be deputed to the best centres of training in the world and be thus equipped to undertake the responsibilities in his own country. If this is not done, the Indianisation of the services will never be achieved within measurable time.

CURRENT MEDICAL LITERATURE

MEDICINE

Constriction of Pulmonary Artery by Adhesive Pericarditis

GOULEY (*American Heart Journal*, April, 1937, page 470) records 6 cases of adhesive pericarditis constricting the pulmonary artery. The adhesions are sometimes dense and may actually compress and constrict the vessel to such a degree as to cause definite physical signs which warrant the clinical diagnosis of pulmonary arterial constrictions. The examinations of the pulmonary area reveals the following characteristic signs, *viz.*, (1) a harsh systolic murmur (2) a great accentuated second pulmonary sound, (3) a diastolic shock in the same area, (4) a systolic pulsation extending upward in the third and second left interspaces in the direction of the pulmonary artery followed by (5) a successive retraction of those interspaces, pulsation and retraction having a sinuous appearance, (6) a systolic thrill in a few cases and (7) increase in cardiac area in the third space. The author notes that in 2 of his cases this compression of the pulmonary artery was the primary major factor in the development of cardiac failure and in the other 4 cases the mechanical factor was only incidental or contributory to their deaths.

Auricular Flutter Continuing for 24 Years

LEWIS (*British Medical Journal*. June 19, 1937, page 1248) reports of a case of auricular flutter in a clergyman which is continuing for the last 24 years. His comment on the case is worth quoting and it runs thus: "The case is of exceptional interest for 3 reasons: first, the auricles seem to have fluttered without cessation for 24 (if not 27) years, secondly, although the ventricle during the greater part of this period has been driven at very excessive rates, the efficiency of the heart has not been impaired by its increased energy expenditure and thirdly, the rate of auricular beating has fallen to 80 beats per minute. This fall might be attributed to lengthening of the auricular path around which the wave travels or more probably to its slower speed of movement. It would be interesting to know if lowering of rate is usual in auricular flutter as age greatly advances."

Rheumatoid Arthritis

SHORT and ASSOCIATES (*Journal of American Medical Association*, June 19, 1937, page 2087-2091) report on their study on the evaluation of the following four tests applied in 49 patients with active rheumatoid arthritis and the results obtained thereof. The tests are (a) sedimentation rate, (b) Schilling count, (c) Verne's resorcinol test (0·5 c.c. of 1·25% watery solution of resorcinol + equal quantity of patient's serum and kept overnight in a refrigerator = turbidity) and strepto agglutination tests and the results were 92·2%, 87%, 58·3% and 53% positives respectively. They further observe that the sedimentation rate test is more accurate in severe than in mild cases and that in cases of one year's duration or under the sedimentation rate and Schilling count are positive less than in cases of longer duration. The authors conclude that sedimentation rate is a great aid in recognition and evaluation of the patient with active rheumatoid arthritis.

Studies in Cardiovascular Syphilis: The Incidence of Syphilitic Aortitis—a Study of 1,000 Syphilitic Individuals

COCHEMS and KEMP (*American Journal of Syphilis, Gonorrhœa and Venereal Diseases*, May, 1937, page 282-286) report on the study of 1,000 cases of syphilis with regard to the incidence of syphilitic aortitis. The study included among other data careful history and physical examination, teleroentgenogram of the chest, fluoroscopic examination and electrocardiogram. They observe that 92 cases of this series were white and the incidence of aortic involvement was 12·7% of which aortitis was 4·2%, aortic insufficiency 2·0%, anecurism 4·7%, aneurism and aortic insufficiency combined 1·8% and that the incidence in females (10·8%) was slightly less than that in males (13·4%). They further observe that the frequency and severity of aortic involvement increases with the advance of age.

Diabetic Coma

JOSLIN and ASSOCIATES (*Archives of Internal Medicine*, Feb., 1937, pages 175-195) report on the

successful treatment of 318 patients with diabetic coma (with carbon-dioxide combining power of venous plasma of 20 volumes per cent. or less) *without* alkalies and the mortality rate is only 11·9%. The authors adopted the following line of treatment, viz., (1) the use of insulin—given subcutaneously and at times intravenously, (2) the liberal use of salt solution subcutaneously and often intravenously to combat dehydration, (3) lavage of the stomach, (4) liquids by mouth at an initial rate not exceeding 100 c.c. every hour, (5) the use of soluble carbohydrate 50 gm. in the first 12 hours and again in the second 12 hours, glucose intravenously or subcutaneously, (6) the use of such drugs as ephedrine or epinephrin to combat circulatory failure. They further note that the use of insulin should depend on (1) the severity of the coma determined by clinical and chemical methods, (2) the age and weight of the patient, (3) the duration of the diabetes and also the coma and (4) previous treatment specially with insulin.

Luminal and Prominal in Epilepsy—A Comparative Study

Millman (*British Medical Journal*, July 10, 1937, pages 61-62) reports the comparative study on the effects of luminal and prominal in epilepsy with regard to the incidence of fits and the behaviour of the patients. The study was made on 39 cases in a colony for mental defectives and the author points out that the total number of fits under prominal treatment was about one-third of the number during a similar period under luminal therapy. He further observes that of 27 abnormally behaving cases 19 improved under prominal, one became worse, and seven produced no change. The average dose of prominal was 3 grains given 3 times daily and the drug even when used in 9 grain doses for prolonged period did not produce any untoward results.

Extracts of Suprarenal Cortex in the Treatment of Addison's Disease

Wilkinson (*Lancet*, July 10, 1937, pages 61-70) reports 9 cases of Addison's disease treated with extracts of suprarenal cortex. Four of these cases have died, 3 from Addison's disease and one in remission from heart failure following auricular fibrillation and 5 are still living, the longest period of survival to date being 3 years 1 month and the shortest 9 months. The author points out that when given in adequate doses the cortical extract is of very definite value in the disease and, in fact, it is the only treatment of any definite value in acute crises. The drug is given either intravenously or intramuscularly and better results are obtained when it is given in 3 or 4 doses spread over 24 hours than when given in a single dose. The author further notes that larger doses are necessary at the beginning and with addition of salt-therapy the dose is gradually decreased and ultimately the drug may be entirely withdrawn.

The Use of Adsorbents in Gastro-Intestinal Disease

Emery (*Journal of the American Medical Association*, Jan. 19, 1937, page 202) writes that only charcoal and kaolin are used for their adsorptive properties, adsorption meaning attachment of one substance on the surface of another. Charcoal has affinity for gases when dry and also adsorps various organic acids and drugs. Activated charcoal (heated to a certain temperature) has higher adsorptive power. The action of kaolin is not known but Fautus thinks that it alters the character of the intestinal flora from the proteolytic type to the aciduric one. Their amphoteric qualities, the possibility of formation by these substances of plugs causing obstruction or trauma, to the intestinal wall have limited their clinical use. Kaolin is indicated in food poisoning and dysentery and is not indicated in diarrhœa due to nervousness, fat intolerance, exophthalmic goitre, pernicious anæmia or amœbic dysentery. It is contra-indicated in dyspepsia, diverticulitis and auto-intoxication.

Failure of Human Immune Transfusion and Serum Therapy in Subacute Streptococcus Endocarditis

Kilgore (*American Heart Journal*, May, 1937, pages 619-623) reports 3 cases of subacute streptococcus viridans endocarditis where injections of blood or serum taken from volunteers immunized with the patient's organisms failed to produce any clinical benefit. One of the patients had 1,660 c.c. of blood and 748 c.c. of serum in 2 months, another in 4 months 2,720 c.c. of blood and 1,100 c.c. of serum and the third received 2,450 c.c. of serum in 15 days. Though there was a slight temporary improvement in the anæmic conditions the patients were in, the blood culture remained positive and embolic phenomenon and fever continued and the patients ultimately died.

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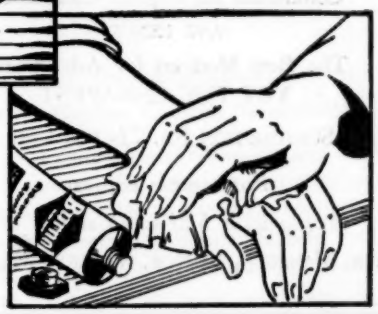

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Arteriosclerosis and Thrombo-Angiitis Obliterans

Bernheim and London (*Journal of American Medical Association*, June 19, 1937, pages 2102-2109) observe that vaso-spasm plays an important role in the production of symptoms and signs in both arteriosclerosis and thrombo-angiitis obliterans and the treatment of vaso-spasm consists of the use of measures to eliminate five vasoconstricting influences, *viz.*, tobacco, improper diets, worry, undue physical exertion and cold. Sodium citrate is given either intravenously or by mouth in severe cases to improve the viscosity of the blood. The diet must be high in calcium and vitamins and there should always be proper care for the extremities, *e.g.*, light massage and passive exercise, avoidance of hot water bags, etc. 99 cases of arteriosclerosis and 54 cases of thrombo-angiitis obliterans were treated with the methods noted above with improvement in 83·8% and 79·6% cases respectively.

Treatment of Pylorospasm with Digitalis: Report of Five Cases

Hollander (*American Journal of Digestive Diseases and Nutrition*, May, 1937, page 158) reports 5 cases of pylorospasm with 6 hour residue treated successfully by oral administration of digitalis. Digitalis was given by the rapid method of Eggleston and the relief of pylorospasm was complete in 2 to 3 days' time both subjectively and roentgenologically. There is evidence that stomach has a strikingly similar innervation as the heart, *e.g.*, there is a node in the lesser curvature acting as pacemaker analogous to sinoauricular node and there is a conductive system along the lesser curvature similar to auriculoventricular bundle and digitalis therapy is effective in spastic motor disturbances in peptic ulcer by cutting off abnormal impulses running along the conductive system of the stomach (similar to its action on heart).

SURGERY

Regional Enteritis

Jackson (*Surgery, Gynæcology and Obstetrics*, July, 1937, pages 1-10) gives a review of 219 cases of which 4 belonged to his own clinic, 64 to Western Surgical Society and the rest from cases reported in the American literature since Crohn's classical description in 1932. Regional enteritis is caused by slow grade infection of unknown origin affecting most frequently the terminal ileum and is characterised clinically by pain, often severe and cramp-like, diarrhœa, vomiting, fever, loss of weight with a local palpable mass, diagnosed roentgenologically by a filling defect in the terminal ileum, distension proximal to the defect and the characteristic "string sign." Post-mortem examinations reveal thickened mesentery, enlarged glands and hyperemic enlarged hose-like intestine. Regional enteritis often simulates appendicitis and appendicectomy does not relieve the symptoms. Proper surgical treatment is still for discussion.

The Treatment of Thrombophlebitis with Acetyl-Beta-Methyl Choline Chloride Iontophoresis

Murphy (*Surgery, Gynæcology and Obstetrics*, July, 1937, page 101) reports on the successful results obtained with acetyl-beta-methyl choline chloride iontophoresis in thrombophlebitis after the febrile stage has subsided. 33 patients were treated with definite improvement in 31 cases and the failure in the remaining 2 cases were ascribed by the author to the inadequate treatment taken by them. The period of disability is markedly shortened and associated varicose ulcers healed up very quickly. No marked untoward effect was noticed though general and local reactions followed each treatment; general reactions are salivation, lacrimation, profuse diaphoresis and diuresis and local reactions are local blush and sweating of the skin and elevation followed by drop of local temperature. Atropine gr. 1/100 often relieves these symptoms and signs. The result of this treatment depends on one or a combination of the three following factors, *viz.*, (1) increased local circulation promoting rapid removal of waste products and increasing local nutrition helping rapid regeneration of damaged tissues, (2) marked local diaphoresis reducing the œdema, (3) relief of the spastic element in phlebitis and lessening of the disturbance in the innervation of the vascular wall.

Serum Phosphatase—Its Clinical Application in Diseases of Bone

Mitchell and Crawford (*Journal of Bone and Joint Surgery*, July, 1937, page 638) write that "in reviewing the relation of serum-phosphatase activity to the more common diseases of bone, it has been

found, in general, that there is an increase in serum-phosphatase activity accompanying the formation of unusual amounts of new or of abnormal bone. There appears to be little or no increase associated with the purely destructive lesion of bone.

Determinations of serum phosphatase are an important aid in the diagnosis and differential diagnosis of Paget's disease, osteitis fibrosa cystica, and tumors of bone.

The level of serum-phosphatase activity cannot be used as an index of healing or of the ability of a fracture to heal.

No significant changes in serum-phosphatase activity were noted in cases of bone and joint tuberculosis and of osteomyelitis.

Serial phosphatase determinations are suggested as a criterion of effective therapy in Paget's disease, hyperparathyroidism, osteoblastic osteogenic sarcoma, and rickets." (*Author's Summary*).

PATHOLOGY AND BACTERIOLOGY

Renal Physiology in Lobar Pneumonia

Farr and Abernethy (*Journal of Clinical Investigation*, May, 1937, page 421) report on the observations made on 28 pneumonia patients admitted to the Rockefeller Institute Hospital for periods up to 6 months. None of the patients had any previous renal disease and each was tested by repeated detailed examinations of urea clearance test, sediment counts, quantitative examination of urinary protein, blood pressure and retinal examinations. They observe that younger patients did not have at any period of illness the clearance value below 110 per cent. of normal, that in the age group of 30 to 40 there was slight hyperfunction during the first ten days, in the age group of 40 to 50 there was no increase of urea clearance and in the oldest group the values were somewhat below the normal average. The clearance value take a long time to return to normal level. They further observe that the amount of protein lost in the urine is negligible; the number of red cells excreted in 12 hours never exceeded the normal value defined by Addis; casts are uniformly increased in number with predominance of hyaline types and number of granular casts varies proportionately with the severity of the disease; there is no significant alteration in blood pressure accompanying the urea clearance; there is no deviation from the expected relationship between fluid intake and fluid output, and sodium chloride in therapeutic doses did not produce any appreciable change in the urea clearance.

Pathology of the Adrenal Gland in Relation to Sudden Death

Simpson (*Lancet*, April 10, 1937, page 851) writes that pathologic changes in the body noted after death from acute insufficiency of the cortex are, for practical purposes, limited to those by which the gland itself is destroyed. Dilatation of the heart, congestion of the lungs, pancreas and other organs, etc., are some of the general changes observed. The three commonly seen morbid processes in the gland are (1) hæmorrhagic necrosis or hæmorrhagic infarction, (2) acute caseative tuberculosis and (3) rapid metastatic growth invasion of the gland. But the most outstanding effect of acute adrenal insufficiency is the biochemical changes produced in the system attended by functional disorder rather than any structural change visible to the eye. These changes are related to alteration in hepatic and renal function due to loss of essential cortical hormone and consist of a rise in cholesterol, a fall in blood sugar, a sharp rise in blood urea and other non-protein nitrogen constituents of the blood, reduction in blood volume and of sodium and chloride in the blood, dehydration of tissues, a decrease in bicarbonate with disturbance in acid-base equilibrium and with the falling of pH. The three prominent biochemical anomalies thus developed are: (1) changes in sodium metabolism, (2) hypoglycæmia and (3) loss of tissue fluid and plasma volume and these three factors collectively, rather than one individually, are responsible for death.

Identification of Tumor Cells in Sediments of Serous Effusions

Foot (*American Journal of Pathology*, January, 1937, page 1) summarizes in the following lines the diagnostic value of reported cells in a given fluid for examination:—

1. The presence of fragments of tumor with the cells arranged in acini or papillæ about a stroma that is definitely fibro-vascular is positive evidence of primary or metastatic malignant tumor of the serous membrane in question.

2. A nucleolar-nuclear ratio (n/N ratio) above 0·25 is of undoubted value; one of 0·30 or more practically pathognomic of the presence of tumour.

3. Mesothelial covering cells are most easily confused with tumor cells on account of their large size and prominent nuclii but they are uniform and regular in size. Tumor cells show a wide variation in measurements and have a high n/N ratio.

4. Multinucleation and cell clumping are of no diagnostic value. Mitosis occurs in cells in both sediments but monster or abnormal mitosis are found only in tumor cells.

5. The presence of erythrocytes and fibrin is of little diagnostic significance.

Syphilis of the Gastro-Intestinal Tract

FOUCAR (*American Journal of Pathology*, Jan., 1937, page 65) reports of a case of gumma of transverse colon in which **treponema palliada** were present in the tissues. In reviewing 11 other cases in the literature and the one presented by him he observes that the average age was 44 years, the proportion of males to females affected was 2 to 1, W. R. was negative in one half of the cases, the lesion was single in 8 and multiple in 4, jejunum was affected 6 times, ileum 2, large intestines 4 times; the diagnosis was never made correctly before death—9 were diagnosed as carcinoma, 1 cholecystitis, 1 intussusception and 1 died of generalised peritonitis following syphilitic ulcer of the jejunum.

Histopathology of the Skin in Human Keratomalacia

RAO (*Indian Journal of Medical Research*, July, 1937, Pages 39-43) in reporting on the study of histopathology of the skin in human keratomalacia notes that " the principal microscopic changes consist of a superficial hyperkeratosis of the epidermis extending into the mouths of the pilosebacious follicles, atrophy of the sebacious glands and slight atrophic changes in some of the hair follicles."

Presence of a Histamine-like Body in Aqueous Humour in Epidemic Dropsy Glaucoma—A Preliminary Report

CHOPRA and DE (*Indian Journal of Medical Research*, July, 1937, Pages 101-104) find out that when aqueous humour obtained from 23 epidemic dropsy glaucoma cases was examined on rat's uterus (Dale's perfusion bath), 7 out of 23 revealed the presence of a histamine-like body but fluid from six normal cases showed negative results.

PHYSIOLOGY, BIOCHEMISTRY AND NUTRITION

Renal Circulation and Pituitary Extract

HANDOVSKY and SAMAAN (*Journal of Physiology*, Feb., 1937, Page 14) thus summarise their experimental findings:

Diuresis by water is preceded by increased renal circulation. Adrenalin causes a decreased renal flow and urine flow was generally reduced. Post-pituitary extract in small doses has no influence on renal blood flow and no change in blood pressure but in conscious dogs produces anti-diuretic effect and in narcotised dogs diuresis. In large doses it increases blood pressure, renal blood flow decreases followed by prolonged increases in flow in both conscious and narcotised dogs but the effect on urine flow is anti-diuretic in conscious dogs and diuretic in the narcotised dogs.

The authors also discuss the explanation of the observed phenomena.

Salts and Human Electrocardiogram

HARRIS and LEVIN (*Journal of Physiology*, March, 1937, Page 153) find the following effects of salts (potassium, calcium) and strophanthin on the human electrocardiogram:—

Potassium: Serum potassium: before injection 20, after 22·8—20·6 mgm. per 100 c.c.

P-T—normal: 0·48 becomes 0·52 – 0·52 secs.

T-P—normal: 0·16 becomes 0·52 – 0·24 secs.

No other marked change.

Calcium: Effect of I. V. Calcium:

Serum calcium before injection 10·2, after 10·4, 10·4, 10·2 mgm. per 100 c.c.

Electrocardiogram: T-P increases from 0·08 to 0·14, 0·16, 0·20 secs.

Q-T increases from 0·28 to 0·32, 0·34, 0·32 secs. No other marked change.

As the same effect was found on vagal stimulation, it may be argued that calcium acts on vagal endings but after atropinisation the calcium effect persists, showing that calcium has direct action.

Strophanthin and Calcium: Strophanthin affects only T-P which is increased. But after strophanthin and calcium P, Q-T, P-T are all slightly diminished as in calcium injection alone and T-P increases. This suggests that calcium and strophanthin are synergic in action.

Action of Eserine and Related Compounds and Acetyl Choline on the Central Nervous System

Schweitzer and Wright (*Journal of Physiology*, March, 1937, Page 165) thus summarise the results of their findings—

Eserine increases knee-jerk and general reflex activity.

Atropine depresses knee-jerk but does not antagonise excitatory action of eserine on reflex activity to any marked degree.

Increased excitatory effect of eserine is due to increased responsiveness on skeletal muscles and not due to changes on the blood pressure or respiration. Eserine also acts on the central nervous system.

Prostigmine and Stedman's meta compound depress reflex action—the inhibitory effect being antagonised by eserine.

Prostigmine, acetyl choline and the meta compound can abolish strychnine convulsions.

Temperature and Renal Secretion

Bickford and Winton (*Journal of Physiology*, March, 1937, Page 198) have found the following interesting facts—

Cooling blood which is being perfused through isolated kidney causes (a) increased urine flow 2 to 10 times, maximum increase occurring when temperature is 10°C, (b) composition of urine to approach that of serum, *i.e.* NaCl value increases and creatinin value decreases to blood serum levels, (c) minimum arterial pressure producing urine in cooled kidney be raised to 110 to 150 mm. Hg. in contrast to 70 to 90 mm. Hg. pressure required for normal kidney, (d) reduction of blood flow through kidney due to rise of intrarenal pressure and (e) increased urethral pressure.

The authors discuss their experimental findings in the light of the present theories of urine formation.

Distribution and Absorption of Amino Acids

Bolton and Wright (*Journal of Physiology*, April, 1937, Page 269) conclude that absorption of amino acids from intestines into capillaries and lymphatics is in accordance with the physical laws of diffusion, there being no evidence of selective activity of capillaries or lymphatics. The greater concentration of amino acids in afferent veins than in efferent lymphatics of villi is due to the closer proximity of the capillaries to the covering epithelium and to rapid flow of blood in the capillaries. During passage of amino acids through liver, a large percentage is broken down.

Vitamin B_1 and Fatty Livers

McHenry (*Journal of Physiology*, April, 1937, Page 287) finds that the oral administration of Vitamin B_1 to rats on low choline diet causes marked increase in liver fat, the amount of fat in the liver is increased by augmenting the amount of fat in the diet, provided, the diet is low in choline.

The Chemical Agent in Sympathetic Control of Retraction of Nictitating Membrane of Cat

Secker (*Journal of Physiology*, April, 1937, Page 296) finds that the responses of the nictitating membrane of cat to sympathetic nerve stimulation or to adrenalin are potentiated by eserine and diminished by atropine. The potentiation is still apparent after adrenectomy and after denervation of the nictitating membrane by ganglionectomy.

Thus it seems to the author that there is some mechanism in the membrane itself in which the exciting agent adrenalin or sympathetic nerve impulse has its effectiveness enhanced by eserine and abolished by atropine. This may be due to cholinergic fibres in the sympathetic supply to the membrane. But such an explanation is not sufficient to show that the response of the membrane to adrenalin is also enhanced by eserine. The postulation of dual nerve supply, adrenergic and cholinergic, is negatived by the fact that acetyl choline injections, even after eserine and denervation have no effect on the membrane.

Insensitivity of Cervix Uteri to Oxytocin

Newton (*Journal of Physiology*, May, 1937, Page 309) finds that Pitocin has contracting effect on the corpus uteri while it has inhibitory effect on the cervix. This confirms his previous findings on the reciprocal innervation of the body and the cervix uteri when adrenalin causes the opposite effect, *i.e.*, relaxation of corpus uteri and contraction of the cervix.

Observation in Man on B. P. raising Reflex Arising from Voluntary Muscles

Alam and Smirk (*Journal of Physiology*, June, 1937, Page 372) have demonstrated a B. P. raising reflex from working voluntary muscles in normal human beings by clinical methods. The reflex is elicited when the metabolites are made to accumulate in the working muscles by a binder. The reflex is designed so that voluntary muscles when they become fatigued may be kept in proper supply of blood by the resulting increase in blood pressure.

Drugs on Knee-jerk

Schweitzer and Wright (*Journal of Physiology*, June, 1937, Page 384) have examined the effects of acetyl choline group and prostigmine group of drugs on the knee-jerk of anæsthetised cats. All the acetyl choline group of drugs, *i.e.*, acetyl choline, doryl, etc., excepting mecholine depress the knee-jerk, partly by central and partly by peripheral action, whereas small doses of the prostigmine group increases knee-jerk by peripheral potentiating action. Large doses of prostigmine have peripheral paralysing action unlike curare in that they are not antagonised by potassium.

Ætioporphyrin and Hæmoglobin Regeneration after Hæmorrhage

Hughes and Latner (*Journal of Physiology*, June, 1937, Page 403) find ætioporphyrin in large doses to markedly increase the speed of hæmoglobin regeneration after hæmorrhage in experimental animals.

Afferent Nerve Fibres from Stomach and Intestines

Irving, McSwiney and Suffolk (*Journal of Physiology*, June, 1937, Page 407) write that it is now generally accepted that many visceræ are sensitive to pain and other stimuli and their stimulation leads to many reflex phenomena.

Using reflex dilatation of pupil as an index of afferent impulses the authors have traced out the afferent fibres from stomach and intestines. They also establish that distension is an adequate stimulus for visceral sensation while cutting and burning have no effect. Their method however do not indicate the character of sensation carried by the different afferent nerves. Following is the summary of their findings:—

1. Gastric and duodenal mesenteries by vagus and splanchnics; jejunal mesentery by splanchnic only. Effective stimulus is traction.

2. Body of stomach, pyloric antrum and sphincter by vagus and sympathetic. Effective stimulus is distension.

3. Stomach and duodenum are supplied by afferent fibres from right and left vagus and from right and left splanchnics.

4. Jejunum and ileum have the right and left splanchnics to be the main afferent pathway and they are sensitive to distension.

PEDIATRICS

Diphtheritic Myocarditis : Electrocardiographic Study

Begg (*Lancet*, April 10, 1937, Page 857) in reporting on the electrocardiographic study of 100 cases of severe faucial diphtheria observes that 84% of the cases showed some form of abnormality electrocardiographically and that 27% of the cases showed conductive system lesion and that mortality in the latter group was twice as high as in the group having no predilection for such lesion. 3 cases died of early circulatory failure and 23 cases of the late type. The author further observes that prognosis is certainly bad in cases who during the course of the disease show in the electrocardiograms signs of complete heart block, bundle branch block or paroxysmal tachycardia but the prognosis is reasonably favourable in other cardiac abnormalities including intraventricular block. A normal electrocardiogram during the first few days of the disease does not preclude the possibility of a sudden circulatory failure. Complete recovery after diphtheritic myocarditis occur except in a few instances of conductive system

lesion, as evidenced by electrocardiographic tracings taken during convalescence.

Are Local Measures of any Significance in the Control of Diphtheria Bacilli in the Nose and Throat?

Schwartzer carried out investigations on a series of 267 diphtheria carriers to determine whether the mouth disinfectants recently recommended (mucidan, pyoktanin, formamint, targesin and lemon-juice) had any effect in ridding the nose and throat of diphtheria bacilli and found that 191 children who were so treated did not lose their bacilli any sooner than 76 children who had no local treatment at all. (summary, Current Literature: *British Journal of Children's Diseases*, April—June, 1937, Page 142).

The Therapeutic Use of Convalescent Serum in Mumps

Hinckey (*Minnesota Medicine*, April, 1937, page 227-229) reports on the effect of convalescent serum in mumps studied during an epidemic breaking out in an agricultural school of the University of Minnesota. The serum was used in 23 cases whereas 53 were taken as controls. The study reveals:

(1) a decided decrease of bilateral affection in serum treated cases (39·1% positive in serum treated cases as opposed to 54·5% in the control group), (2) a decrease in the member and percentage of complications in serum treated cases (13% complicated in serum treated cases and 40% in the control group), (3) uncomplicated cases ran a shorter and milder course in the serum treated group, (4) glycosuria was more frequent in the serum treated group than in the control group (61% and 21% respectively). The author concludes by noting that a small dose of convalescent serum given as early as possible will decrease the number of bilateral and complicated cases and cut short the course in milder ones.

Pneumococcus Peritonitis

Cole observes: A study of the 26 cases of pneumococcus peritonitis occurring in the St. Louis Children's Hospital during the past eighteen years has led to certain deductions. In this series it appears that development of peritonitis secondary to infections, such as those of the upper respiratory tract, is more common than any other type of development. The differentiation of the condition from acute appendicitis can usually be made by noting such features as the early development of fever, profuse vomiting, diffuse tenderness and pain, and prevalence in girls. Diagnostic puncture of the abdomen is justifiable in children when the diagnosis is uncertain, and rarely fails in establishing a correct diagnosis if the peritonitis is of pneumococcal origin. Immediate operation appears to be contraindicated. More favourable results are obtained when operation is delayed until a localised abscess forms.

If the child survives the acute stage of the disease recovery is almost certain, even though one or more localized abscesses form; however, such abscesses must be drained properly.

Pneumococcus peritonitis is a common complication of nephrosis. The mortality in children with the latter condition is higher than in previously healthy children. (Abstracts of Current Literature, *Surgery, Gynæcology and Obstetrics*, July, 1937, Page 34).

ASSOCIATION NOTES

U. P. PROVINCIAL BRANCH

Proceedings of the Working Committee meeting of U. P. Provincial Branch of I. M. A. held on the 9th July, 1937, at the Garvie Medical Library rooms at 6-30 p.m.

Members present—Dr. R. C. Mitter, Vice-President (in the Chair), Drs. R. C. Chaurasia, Bhupal Singh, K. N. Tandon and Hira Lal.

1. *Accounts up to the end of June, 1937*—Resolved that the accounts be passed.

2. *Consideration of letter from Benares Branch inviting IV U. P. Medical Conference to Benares for formal acceptance*—Resolved that the invitation of the Benares Branch for holding the IV U. P. Medical Conference at Benares be accepted with thanks.

3. *Dates for the Conference*—Resolved that 17th and 18th of October, 1937, be accepted as suggested by the Benares Branch.

4. *Gonda Branch's letter about seats in the local Durbar allotted to members of the Branch*—Resolved that, while appreciating the viewpoint of the Gonda Branch regarding the question of seats in the official functions, this matter may be brought up before the IV U. P. Medical Conference in the form of a resolution. The Gonda Branch may be requested to send a draft resolution on the subject for the consideration of the Working Committee.

5. *Gonda Branch's letter about an unqualified gentleman Mr. K. K. Mukerji practising in Gonda as an allopathic doctor*—Resolved that the question of unqualified practitioners practising as allopaths and using the prefix ' Doctor ' be put before the IV U.P. Medical Conference. Gonda Branch may be requested to send a draft resolution for the consideration of the Working Committee.

6. *Circular letter of I.M.A. of the 24th April, 1937, regarding writing letters to Indian members of I.M.S. to join I.M.A.*—Resolved that the action of the Provincial Secretary be approved.

7. *Correspondence between the Provincial Secretary of Licentiates and Provincial Secretary of I.M.A., U.P. Branch, and also between the latter and President of Licentiates' Association, Saharanpur*—Resolved that the action taken by the Provincial Secretary be approved and he may be asked to prepare a brief but comprehensive and up to date statement and send it to all branches and other members.

8. *Dr. Chowdhury's letter of suggestions about practical schemes for the good of I.M.A.*—Noted and action is being taken by the Sub-Committee appointed for considering resolutions under resolution No. 6 of Working Committee meeting of 12-12-36.

9. *Cases of Budaun and Najibabad Branches which are practically in abeyance*—Resolved that the arrears against the Budaun Branch for the last two years may be written off and efforts made to revive the Branch. Regarding Najibabad, current dues may be awaited.

10. *Proceedings of the meeting of the Sub-Committee appointed to consider certain resolutions*—

Proceedings were read. Resolved that they be noted.

11. *The question of arrears of the Allahabad Branch as recently settled.*—Resolved that the settlement be approved.

With a vote of thanks to the Chair the meeting dispersed.

BHUPAL SINGH,
Hony. Prov. Secy.

K. N. TANDON,
Hony Prov. Jt. Secy.

R. C. MITTER,
(*Vice-President*),
Chairman.

MONGHYR MEDICAL ASSOCIATION

The Annual General Meeting of the Monghyr Medical Association was held on the 28th April, 1937.

1. The Hony. Secretary read the Annual Report.
2. The following office-bearers were elected:—

President—Dr. B. Brahmachari.
Vice-Presidents—Drs. Chinol and A. Rahaman.
Secretary—Dr. A. Rasheed.
Joint Secretary—Dr. B. Bose.
Treasurer—Dr. N. C. Roy.

Later Dr. Roy resigned and Dr. D. K. Dutta was elected Treasurer in a monthly meeting.

SECRETARY'S REPORT

Mr. President and Gentlemen present,

In presenting the annual report of the working of the association in the year 1936-37, I beg to express at the outset on my behalf and on behalf of my association, our grateful thanks to Capt. H. C. Curran, I.M.S., the Civil Surgeon of Monghyr for his kind consent to preside over to-day's meeting. By the joint effort of some of the members of the profession, the association was started on the 16th of March, 1936, under the able guidance of Capt. P. L. O'Neil, I.M.S., the then Civil Surgeon of Monghyr. The main aim of the association is unity amongst the members of the profession by which we can safeguard the interest, improve the prestige and position of the medical profession.

Meetings: We have our rental association hall in Bekapur market where we meet every Monday of the month and on the first Monday of the month we hold our monthly meetings. Fifteen meetings were held during the year under review; of which twelve were ordinary monthly meetings, one general meeting and two emergent meetings. The average attendance of the members in the meetings were sixty-one per cent. In three monthly meetings papers were read on the following subjects:—

1. A peculiar case of K. A. susceptible to compounds of Antimony by Dr. B. G. Bose, M.B.B.S.
2. Failure of Antimony in Malaria by Dr. A. Rasheed.
3. Blunders that doctors make by Dr. Nasiruddin.
4. Enlarged Tonsils and Adenoids causing temporary deafness by Dr. M. S. Mullick.
5. Pneumonia by Dr. B. Brahmachari.
6. Vitamins by Dr. D. K. Dutta.

Farewell Meetings: We had two farewell meetings—one on the occasion of transfer of Dr. S. B. Dutta and the other on the transfer of Major D. N. Gupta.

Journals: We subscribe the *Practitioner*, *Indian Medical Gazette* and the *Antiseptic*. These were regularly circulated amongst the members through the bearer of the association.

Finance: The main source of income is the monthly subscription and donation at the beginning of the membership from the members. The monthly subscription is Re. 1/- per head. The highest and lowest donation received during the year under report was Rs. 20/- and Rs. 2/- respectively. Total receipt of the year up to 31st March, 1937, was Rs. 397/- and total expenditure under various heads amounted to Rs. 225-10-9 pies, thus leaving a balance of Rs. 171-5-3 pies which is in the custody of our treasurer Dr. S. N. Sen.

Branch of Indian Medical Association: In the month of January last the association was made a branch of the Indian Medical Association. I am proud to say that it is now a branch of that great medical organisation of India. Twelve members of our association have contributed Rs. 3/- per year as a subscription to the central fund and in lieu of that amount each member is getting a copy of the *Journal of the Indian Medical Association* free of charge.

Numerical strength: The association was started with 23 members in the roll but during the year some 5 members resigned as they had to leave the place owing to transfer and othear reasons. Three new members have been registered and thus at present we have 21 members on the list.

Obituary: During the year under report three condolence resolutions were passed, the members remaining all standing, on the sad demise of the following members of the profession:—

1. Dr. Kedar Nath Das on 16-3-36.
2. Dr. Ansari on 6-7-36.
3. Dr. Noni Lal Pan on 2-11-36.

Messages of condolence were sent to the bereaved families and to the press.

In conclusion I again thank the President for his kind acceptance of our invitation in the midst of his pressing engagements to preside over the function. I also thank the members of the profession for their presence in the meeting with a view to make it a success.

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PRESIDENTIAL ADDRESS BY DR. B. BRAHMACHARI

Ladies and Gentlemen,

I have the honour and proud privilege to thank you all for having given me an opportunity to extend a very cordial welcome to you on my behalf and of the Association.

Our city of historic fame, once the capital of Nawab Mir Kasim, is well-known all over the province for its salubrious climate, good health—its border land being drenched by the balmy waves of the river Ganges—majestically flowing in her prestine glory.

Of all sciences, ours the medical science is fast advancing; views, opinions are changing every moment; unless a member of the profession is kept in touch with the most recent and up-to-date advances in medicine, he is no better than a mere quack.

Unions, meetings, conferences of medical men afford ample opportunities to learn and to exchange views with the professional brethren and thereby educate and keep oneself up-to-date in our professional zone.

Having lived and practised in this town for a decade and a half and having known other towns of

the province, I shall hold that ours gains a prominent place amongst them as far as its charming climate in the cold weather is concerned.

It is only during the last few years after the earthquake devastation that the general health of the town has fallen below the original standard owing to faulty arrangements in the disposal of house-refuges, filth from public drains, etc., which vitiate the atmosphere of different localities, hit the back-bone of sanitation and thereby open to flood-gate for occurrences of fell diseases, *e.g.*, typhoid, small-pox, etc., and specially that dreadful disease of tuberculosis. These are very common nowadays in the town area. However we all earnestly hope that our Municipality will tackle the problem successfully and bring this ancient town back to its former state of salubrity. The appointment of a fully-qualified medical officer of Public Health will make an easy solution of the problem.

It is encouraging to note that the members of the profession are increasing in numbers throughout the country at top-speed and organisation has began in right earnest.

One melancholy duty placed before me on this occasion is to record the heavy losses sustained by the profession in the demises of 1, Sir Kedar Nath Das, Kt., a decoration to the world of Midwifery and Gynæcology. 2. Col. Bhola Nauth, a doyan of our profession. 3. Dr. Ansari, a great patriot, an outstanding apostle of country-peace and harmony.

We mourn the losses of these pioneers of the profession whose towering personalities were a guiding light and whose names of country-wide fame will remain immortalised in the annals of the medical profession.

It will not be out of place to request you, my professional brethren, to be united together to make the association of this historic city a really active and living organisation, be he in service or a private man. It should be our constant high aim to raise the general standard of our knowledge by exchange of views and discussions while we meet, and by reading papers at times.

One important fact that I may place before this distinguished gathering on this solemn occasion is the question of allowing members of the medical profession their due representation at the Municipal and Local Boards.

Having worked in the zone for nearly three decades, I am of opinion that the medical professional men ought to be most useful desirable members of the Municipal and Local Boards in general.

Further, I draw your attention on behalf of the junior section of our profession to the increase in members by leaps and bounds throughout the country with resultant competition. The senior men should pull up the struggling junior section as best as possible in these days of economic stress. Our country is subjected to, and thereby victimised by keen struggles for existence.

Again from my side I advise junior brethren to wisely accommodate themselves to changes of time to adopt plain living. Much harder times, keener struggles for existence are staring at us.

There is waiting out in the suburban and rural areas extensive field for humanitarian services. There the sufferers are gripped by all-developing hands of death for want of proper medical relief.

Towns, all over the country, are flooded with qualified medical men of different standards; undesirable competition amongst medical men are practised nowadays.

Medical ethics, once held in high esteem, is hardly a subject of veneration these days: if the current tide flows onwards it may in course of time be crumpled and wiped out of medical universe. Friendly co-operations, good-will, mutual trust are essential factors in serving humanitarian causes successfully and effectively.

Amongst other factors, the one which is no less important, is the responsibility of a medical man when he is entrusted with the life of a sufferer. His responsibility does not cease with the writing of a prescription and delivering necessary instruction to the sufferers but to spare a part of his valuable time, whenever possible, in attending to medicines to note whether properly dispensed or not. In cases of failures owing to faulty services by the dispenser, the generous chemist and his staff fed at his cost, will not hesitate in the least to play with his reputation at their sweet will.

"Strange are the ways of the world"—"one who is fed does not hesitate to stab the feeder."

These chemists are a class of business men in the town, quite oblivious of their duties at times, entrust their compounders with their entire functions willingly in order to lead an easy life. We have reason thereby to expect irregularities, mistakes, errors under the circumstances stated.

It may be respectfully placed before the generous patron of the association, presiding at this meeting, for holding periodic inspections of these druggists' shops, to make possible rectifications of defects, performance of more effective methods of works, maintenance of better standards and thereby fulfilment of useful services for the suffering humanity. His kind support, and whole-hearted protection play an important part in the maintenance of dignity and high traditions of the profession.

Another important problem that has been looming large on the horizon and causing grave concern is the unemployment in the ranks of qualified medical men. The reasons for this are:—

1. Limited number of posts available in different departments, Government, Railways, States, Factories, District Boards, Municipalities.

2. The medical men are increasing in numbers by leaps and bounds and their annual outturn is not inconsiderable lightly to be passed away.

3. Our system of healing is very costly at times.

4. Increasing competitions, not only amongst ourselves, but with followers of other systems of healing patronised by Government and other corporate bodies and especially the quacks whose intrusion is highly detrimental to the profession.

5. Lastly the country-wide economic stress has affected the purse of the sufferers.

A time will soon arrive in the country when medical men will out-number paying patients.

No one is allowed to practise as a lawyer unless he is qualified in examinations in Law, his merit thoroughly tested by the distinguished members of the legal profession; but here in the medical profession there is no law to prevent one from practising the healing art without any qualification for his personal gains.

'Quackery should be segregated from the Healing Art.' It is easy to wipe it out in a land wherein one system of medicine reigns but not in the land of ours where for centuries the people have been accustomed to an antiquated system supported by the scriptures hallowed by the religion, held in high esteem and venerence for days past. The section amongst quacks dealing with Western system of Healing is really dangerous to the profession. Not infrequently they hazard the lives of the sufferers and should be bound down by law.

Next I am urged to deal on this occasion with our methods of diagnosis and treatment of diseases. The attending physician or surgeon often needs help from the bacteriologists, radiologists and so on and of a consultant at times in properly conducting his cases. These co-operative works run into heavy expenses. In other systems of healing, methods of diagnosis are simpler, remedies less costly. It is high time for us to device means to lessen the burden of expenses of our system with maintenance of efficiency.

Every member of the profession should have a clinic attached to his chamber and the charges for the examination should be as moderate as one can afford to meet them. For radiological examinations, the authorities of the department concerned should be approached when necessity arises for consideration of the charges in deserving cases.

Another most important fact which should not be lost sight of on this occasion, is "Abuse of services from charitable hospitals, dispensaries and from the members of the profession in their chamber by certain members of the classes, who are easy in circumstances, boast of their personalities. They spend very often much beyond what is required for their personal comforts and luxuries of life, for unnecessary litigations besides other mal-practices but on the other hand they consider that money spent to afford relief to the aching body is an unnecessary lavish expenditure. Thus they deprive to a great extent the poor population of the country of the adequate amount of help and services legitimately due to them from such institutions and members of the profession alike and eventually impoverish the medical profession dispossessed of its just and proper dues. One possessed of a generous heart should pity such mentality.

Lastly the unemployment resulting from economic depression is at the present moment irremediable but this tense atmosphere may, to a certain extent, be ceased if the general tendency amongst medical men to settle down in towns in preference to villages is banished from their minds for good. Thus they can prosper in life, eradicate quackery, save the sufferers from the grip of untimely deaths and play important part in village uplift and rural welfare.

It is indeed gratifying to note that the Indian Medical Association is progressing throughout the country with long steps and it may be reasonably expected that our association, a branch of the same, will follow the foot-steps of the parent body.

Before I close, my humble appeal goes to all qualified members of the profession to come forward and to join this Branch of the Indian Medical Association as members and thereby combined and concerted efforts in common welfare—we may hope to work with due regard to the high traditions of our noble profession and possess the strength that will never wound any human heart; hearts of the old, the weak, the infirm.

Ladies and gentlemen, I heartily thank you all once again for having spared your time in gracing this solemn occasion.

* * * *

ADDRESS BY CAPT. H. C. CURRAN, I.M.S.,

May I take this opportunity of expressing my sincere thanks to the members of the Monghyr Medical Association for making me a patron of their Association. I am anxious to help the association in every way I can. The members, individually and collectively can rest assured that as far as possible my help and advice, such as it is, will always be at their disposal.

A little over a year ago, the first meeting of the Monghyr Medical Association was held. At that meeting the objects of the Association were clearly defined. They are:—

1. The promotion and advancement of the medical and allied sciences.
2. The improvement of the public health and medical education in the district.

3. The maintenance of the honour and dignity and the upholding of the interests of the medical profession and co-operation between the members themselves.

These are admirable objects for the association, but to my mind the most important and signifying is that which lays down the improvement of the public health and medical education in the district.

I am very glad to see that the medical men of Monghyr are alive to the necessity for the improvement of the standard of public health in this country. If we allow ourselves a moment to consider the almost lack of knowledge of the elementary principles of hygiene and sanitation, and the great need of them; we shall speedily realise that there is a tremendous uphill task for those who have the welfare of their country at heart.

Everyday we see the signs of the awakening of the educated people of India to a better understanding of the need for raising the standard of physique of the nation. We are living in an age where physical fitness of the individual and so of the nation is looked upon as of paramount importance. In Europe and America the day is not far distant when the youth of the countries will be compelled by law to join one or other of the numerous health movements that are such a feature of modern life. India must no longer be content to be a Class III nation.

When we think of the ravages caused by such diseases as tuberculosis, infant and maternal mortality, malaria, kala-azar, small-pox, cholera, plague, dysentery, beri-beri and hook-worm infection, to mention but a few diseases, we realise that the nation has a long and uphill road to travel. But there is more than a gleam of hope for us in that most of these diseases are preventable. And it is to the medical profession that the general public looks for a lead in these matters.

In this connection, may I say that I have been in many stations in India, but I can safely say that nowhere have I seen such generosity and willingness to co-operate among the well-to-do people as I have seen in Monghyr. Quite recently a sum of Rs. 40,000/- was subscribed to endow the child welfare centre. The Sadar Hospital is another example of generosity and public spiritedness of the chief men of Monghyr and the district, and I realize that they only require to be shown in what direction their activities should lie to subscribe fully and freely for any object that will lessen the hardships of the less fortunate brethren.

It is up to us then, members of the medical profession to point the way. Your District Board is fortunate in having at its head, men who are fully alive to needs of the populace and I take this opportunity of saying how much I appreciate their efforts to meet my requirements as regards the medical needs in the moffusil I wish I had the same co-operation from the Dispensary Committees.

To be practical then, our aim and object should be to bring home to the people by word and example the need for raising the physical standards and improving the lot of the people. Other provinces have already entered the field, see to it that Bihar does not lag behind. Take an interest in such schemes as anti-tuberculosis, maternity and child welfare, Hygiene and Village sanitation. Much can be done by propaganda, lantern slide lectures, the establishment of child welfare centres in the district in connection with the sub-divisional hospitals, distribution of leaflets on various preventable diseases, poster in such places as dispensaries, kacheries, post offices, police posts, railway stations. Make use of the press, which is nowadays recognised as a power in the life of any community.

And here let me address a word to those doctors who may, at any time, be called on to do epidemic work in the field. Do not be content in doing the minimum amount of work that you think will earn your pay. Throw your energies into the work before you. Make it a personal matter to see that you awake the public conscience to the necessity for such things as vaccination, inoculation for cholera, plague, etc. Prepare a series of simple straightforward lectures on various subjects beforehand. These lectures might well be evolved here in your association and a number of them typed or printed so that the epidemic doctor can be at once in a position to launch his campaign the moment he gets into the field.

The future of medicine lies, not with the physician but with the public health official. No one will deny that our towns are overcrowded with medical men, who in many cases eke out a bare livelihood. As the public conscience is awakened to the need for preventive medicine, then I feel sure that enlightened local bodies will not lag behind in creating post for suitably qualified men.

Therein lies the future welfare of the country. It is in your hands. You, as members of the Monghyr Medical Association have made an admirable start in making it one of the objects of your association. See to it, that the matter is not allowed to rest there, but rather throw your energies into giving it practical shape and so bring a measure of alleviation of comfort to your less fortunate brethren.

HOOGHLY-CHINSURAH-CHANDERNAGORE BRANCH

At a General Meeting of the Branch held on the 19th July last to discuss the unemployment problem among the members of the medical profession, Dr. Bankim Chandra Chatterjea, M.B., delivered the following address:—

Mr. President and Colleagues in the profession.

I have been fortunate enough to be called upon to speak a few words regarding the economic condi-

tion of our fraternity this evening. Our association is highly concerned with the consideration of the question of unemployment among the medical men. I will lay down some suggestions and it is for this house to consider them and to take necessary steps. It would not be out of place here to mention that I wish to learn something new from you who might have gathered experience to give more practical and more workable suggestions. I invite you to bring your heads together on this urgent problem. Suggestions have poured in from various branches and it is high time that we should rise equal to the occasion. It is our problem and we must solve it ourselves. "Heaven helps those who help themselves." While this association rightly concerns itself with problems which are of interest to the profession, nothing can concern its members more intimately than the provision of their bread and butter. Unemployment in every walk of life and in every part of the world has been a problem ever since the termination of the Great War and during the last few years of world-wide depression, the seriousness of this problem has been markedly aggravated. The learned professions have suffered with the rest and nowhere is this state of over-crowding more apparent than in the medical profession in the large cities in India.

The population of Bengal in 1921 was 44,599,233 whereas in 1931 there were 51,087,338 persons in the province; this means that during the last intercensal decade, there has been a 7·3 per cent. increase in the general population. In the 1921 census, the medical profession including registered and unregistered practitioners and dentists totalled 43,172 and in 1931 the same group contained 53,424 persons—an increase of 23·7 per cent. Thus the percentage increase in the medical profession is three times that of the increase in the total population. In other words, during this ten years period, the number of individuals per practitioner has fallen from 1102·5 in 1921 to 956 in 1931. In 1921 census of England and Wales there were 1561, four individuals per practitioner in these two sections of the British Isles. It is true that English figures do not include unregistered practitioners whereas those of Bengal do, but the number of such persons engaged in whole time work in England is so small that their influence on the total would probably be unappreciable. In Bengal however, 42 per cent. of the persons engaged in whole time work connected with healing art are unregistered. Nevertheless, they must be included in the calculations because the influence of these unregistered practitioners on the earnings of the registered practitioners is very considerable and is often a cause of complaint from the latter. If we exclude the unregistered class, the number of persons in the province per registered practitioner is 1649.

For many years the cry in Bengal has been for more medical men for the country districts and to meet this demand, small medical schools have been opened in the division headquarters towns in the province. The position has now been reached when on paper there is an adequate supply of medical men for the whole population but the fact still remains that in practically every country district in Bengal the provision of medical personnel for the population is far below the ideal. What is the explanation for this anomalous state of affairs, unemployment amongst the medical profession on the one hand and insufficient medical attention for the majority of the population on the other? One of the obvious causes is uneven distribution of medical men in the province.

There is a tendency in Bengal just as in other provinces and other countries for medical men to gravitate to the large population centres. It is not difficult to see the reason for this. The student sees that in the town where he has been educated, there are opportunities for a higher grade of practice which his training had taught to appreciate. He realises that those pleasant aids to diagnosis, such as X-rays and even the microscope, will probably be for ever out of his reach in a country practice. If he is ambitious, he also sees that it is only in towns that big reputations and incidentally big fortunes are to be made and even if he has few ambitions and is prepared to face medical practice in its simplest form and to treat his patients symptomatically and empirically, he is still faced with the problem of earning a living which, if he is prepared to bury himself in a country district, where his services are really needed, he may have considerable difficulty in doing. This tendency on the part of the medical profession to congregate in large towns is thus governed by either laudable ambitious or sound common sense. The young doctor feels, not without reason, that it is better to risk starvation in the town than to court it with certainty in the country. One could not, even if one wished, legislate against ambition—the only alternative is to make it worth while for the medical men to settle in the country. This is a problem which I do propose to discuss here.

Gentlemen, poverty of the villagers can be better imagined than described. It has become rather fabulous. Though young in years, I have tasted bitter cups of adversity in villages. I have a first hand knowledge of Bengal villages as I happen to be a veteran of many a well fought field. My idea is that if wealthy men settled in villages, the condition of villagers will materially improve and medical practitioners would find sufficient field for practice. With the introduction of Hoare-Willingdon Reforms, *i.e.*, with the enactment of the Government of India Act, 1935, and mass uplift policy of the Indian National Congress so well sponsored by our beloved leader Pandit Jawaharlal Nehru, the economic outlook of villages is certainly going to be brighter and brighter day by day. But this change in village life will not take place in a day. Certainly it will take some years to make such improvement in village economic life noticeable and appreciable. But with the present

day state of affairs, qualified medical men can not be encouraged to settle in villages unless and until state aid in the form of subsidies is available.

To deal with this question of overproduction of medical men, I go to the length of suggesting that so many schools which are gradually cropping up must be closed down otherwise number of medical men will swell and acute unemployment is sure to stare us in our faces. All the Provincial Governments must be moved and agitation must be carried on in the press and the platform. We are sure to meet with vehement objection at the beginning but gradually sounder sense will prevail and our attempt will surely succeed.

Most of us here are independent medical practitioners. The independent medical practitioners depend entirely on private medical practice for their livelihood and they have to carry on this against what may be called " State-aided competition." It is really hard for a private medical practitioner to compete with medical men subsidized by Government. I demand that the undue and unfair competition which is going on at present between the struggling private practitioner and the salaried state men should cease and medical men in service should be debarred from private practice. The independent medical practitioner has another more formidable opponent in the person of the quacks including so many 'pathies' particularly the ' Homœopathy.' Because the majority of our people are uneducated, they cannot differentiate between one doctor and another and as a consequence fall a prey to quacks. With the spread of education this state of things will disappear and people will learn to insist on having their monies worth. Various factors are at play to undermine the *status quo* of the qualified *medicos*. The quacks of old who were subservient tools of the 'Big Bobs' of the profession are very scarce and have disappeared practically with the enactment of the Medical Registration Act and the setting up of the State Medical Faculty. But I must say with all the emphasis at my command that quackery in the garb of pseudo-scientific, make believe, propaganda created schools of thought are fighting a guerilla warfare with the science-constituted, genuine, rationalist, orthodox system of treatment and with a distinct effect, I mean the so-called Homœopathy. Propaganda is to be fought with propaganda and the education of the mass mentality is to be carried on with the aid of lectures, lanterns, diagrams, statistics and proper illumination of the rational elements of thought. The people at large are ill equipped to judge the merits and demerits of a qualified medical man but a glamorous advertisement combined with a Baby Austin and a fashionable tie and coat conspire to set at naught the hard earned degree and the knowledge gained at the bedside and the laboratory. Propaganda is the weapon of the day and "interested propagandism" has carved out places for many 'pathies' dubbed as such by fertile imaginations. Besides Homœopathy, there have come into being many ' pathies ' cropping up mushroom like as so many boils in the social body and poisoning the whole accustomed to an antiquated system supported by the cancer, epithelioma, etc., taken up by such ' paths ' and generous hopes vouchsafed to the relatives and then squeezing out sufficient money out of them, give up the cases on pretext of not acting up to their advices. These charlatans in medicine are a pest to the society and a bane to the profession. Are we to stoop so low as to act as henchmen to such paths and pamper to the susceptibilities of the public by not uttering a single word against these self made healers? Why not our fraternity carry on a campaign against these erstwhile ' satraps ' of the healing art? They command the cream of expert practice. Malignant tumours, heart diseases, cases of hyperpyrexia cater them their clients and clienteles, ' fools rush in where angels fear to tread ' and it is no wonder that substantial hopes are proferred by these Dhanwantaries in modern garb. A pernicious malaria case here, a black water fever there are snatched away from the care of the mundane orthodox doctor and the saviour castigates the inhuman brutal treatment and applies his balm from his vials—but lo! alas! the wretch could not be saved but for the previous application of crude methods. Thus another torrent of abuse and ignominy is let loose on the head of the orthodox doctor who is not there to defend himself. The credulous public swallows these trashes with a gullibility worthy of a cox comb. I am here to vindicate our existence. I am here to put a big interrogative to our fraternity that if you do not take time by the forelock, if you do not stir a little to lay bare the false and fabulous claims of these charlatans; you are destined to be swamped out and the cream of your practice will go to the hands of unschooled and unlessoned votaries of the various pathies.

I suggest that provincial governments should be moved forthwith for making a bill to give an effective burial to the quacks. Strong legislative measures must be introduced to do away effectively with this part of the problem.

Now I come to the question of free hospitals and charitable institutions. On account of the present financial depression, unemployment problem has become more serious in as much as it has restricted the paying capacity of the general public for professional services and a large number of them now resort to charitable institutions for advice and treatment. By opening charitable hospitals and dispensaries, the chances of private practitioners in that particular area of earning a living are reduced to a minimum. It might increase the practice of those favoured few who happen to work in such hospitals but is detrimental to the interest of the majority. Free treatment in such hospitals and dispensaries should be confined only to persons in indigent circumstances. These institutions, I am afraid, will in future go on multiplying and I have no doubt that

they will surely affect the income from private practice. We are however proud to belong to a profession which is not only dubbed "noble" in as much as we are required to mitigate to the needs of the suffering humanity, but which is founded on self-restraint and self-abnegation. It is the medical man who lays down the laws of healthy living and it is the medical man who discovers methods of preventing diseases. And in so doing, he sacrifices his own income. Yet he has to live, he has to meet the ordinary demands of life. In the West, Panel system, club system have been introduced to meet this difficulty. In some states of America, every medical man is paid from the state and they treat patients free. In England, Municipal Corporations in urban areas and the county councils in rural areas have established dispensaries on co-operative system. It is difficult to say which plan will suit us best. I feel strongly that our hospitals while making ample provisions for the poor, should charge those who are able to pay on a graded scale. Such payments are to be demanded not on the basis of additional comforts provided to them but on their capacity to pay. After all, it is a debatable question whether it is preferable to give treatment in the hospital free and find the cost by taxing the general public or charge the patients for treatment and reduce the general incidence of taxation.

Gentlemen, I have finished. I do not want to waste your valuable time. I have tried to indicate the various problems regarding the economic condition of our fraternity. I have suggestions on behalf of the Hughli-Chinsurah-Chandernagore Branch. It is for you to discuss them, to accept them or reject them as you will and I will convey your decision to the Central Council.

Recommendations of the Hughli-Chinsurah-Chandernagore Branch on the unemployment problem among medical men:

1. Legislation against quacks.

2. Medical schools should be closed down to do away with the overcrowding of medical profession.

3. To qualified medical men to settle in villages, subsidy must come from the state.

4. Rationalisation of hospitals.

5. Service men should be debarred from private practice.

6. To amend the Municipal Act prohibiting prescription of drugs of B. P. by quacks.

JHANSI MEDICAL ASSOCIATION

At a meeting of the Jhansi Medical Association the following resolution moved from the Chair was carried unanimously, all standing.

"This Association has learnt with great regret the sad and untimely death of Dr. B. G. S. Acharya, M.B.B.S., D.O.M.S., F.R.C.S., Professor of Ophthalmology, King George's Medical College, Lucknow and expresses sympathy with his relatives in their bereavement. His death is a great loss to the profession in general and to Lucknow Medical College in particular."

H. N. SHIVAPURI,
Hony Secretary.

DEORIA MEDICAL ASSOCIATION

The 10th monthly meeting of the year was held on the 8th August, 1937, at 2 p.m., at the residence of Dr. H. N. Bhatt, Deoria. The President occupied the Chair.

After the minutes of the last meeting were read by the Secretary, Dr. Bhatt spoke on the treatment of Boils and Abscesses. Dr. B. B. Srivastava then cited and demonstrated a very uncommon and interesting case of respiratory obstruction. In addition to other works, the following resolutions of Dr. S. C. Acharya were unanimously passed:—

1. "Be it resolved that the Deoria Medical Association, while unanimously thanking and appreciating the action of the Chief Inspector of Factories, United Provinces, Cawnpore, and the managements and proprietors of all the sugar factories situated in the Gorakhpur district in appointing qualified medical officers in their factory-dispensaries, it views with regret that the Mahaswastika Mills of Deoria and Noori Sugar Mills of Bhatni are the only two factories in the district, where only the untrained compounders are kept for the custody of their employees' health. This practice, in the opinion of the Association, is most detrimental to the interest of the employees of the mills; hence, it requests the Chief Inspector of Factories, United Provinces, and the managements and proprietors of the above two mills to employ qualified doctors in their dispensaries from the next working season of their factories."

2. "Be it resolved that the copy of the above resolutions be forwarded to the Chief Inspector of Factories, United Provinces, Cawnpore, the Managing Agents, the Mahaswastika Sugar and Industrial Corporation Ltd., Deoria, and the Proprietors and Manager, the Noori Sugar Mills, Bhatni, for their information and necessary action."

3. " Be it resolved that the Deoria Medical Association congratulates the members of the State Medical Faculty of the United Provinces in general and Dr. S. L. Sharma, the mover, in particular, for unanimously passing a resolution in the last meeting of the Faculty for increasing the minimum educational qualification of the students of the Agra Medical School to Intermediate Science and the course of study to 5 years."

Dr. H. N. Bhatt was ' At Home ' to the members after the meeting.

S. N. MUKHERJI,
Hony. Secretary.

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A special general meeting was held on the 18th July, 1937, at 1-30 p.m., at the residence of Dr. Jagat Singh, Deoria.

More than half the members were present in the meeting. Dr. A. Samad was then elected and nominated by this Branch of I.M.A. for the office of the President of the U. P. Medical Association. In addition to other works, the following resolution was moved from the Chair and passed unanimously, all standing:—

" Resolved that the Deoria Medical Association, Branch of I.M.A., records its deep sense of sorrow at the sad and untimely demise of Dr. B. G. S. Acharya, Professor of Ophthalmology, K. G. Medical College, Lucknow, and feels that his passing away is a great loss to the medical profession in India in general, and the Medical College, Lucknow, in particular; and conveys its heart-felt condolence to the bereaved family.

Resolved further that a copy of the above resolution be sent to Mrs. Acharya, Principal, Medical College, Lucknow, and the Press."

S. N. MUKERJEE,
Hony Secretary.

RAWALPINDI BRANCH

A meeting of the Rawalpindi Branch was held on the 15th July last at the residence of Dr. Harnam Singh. A dinner was given in honour of the retiring Hon. Joint Secretary of the Branch, Dr. A. S. Baxi who was leaving Pindi, to take up his new appointment as Ophthalmic Surgeon, Eye Hospital, Wadhwan. Speeches eulogising the valuable services rendered by Dr. Baxi were delivered by Capt. S. D. Vania, the President, and Dr. R. C. Suri, the Hon. Secretary. Dr. Baxi thanked those present for the honour done to him, and the function came to an end.

Dr. Harnam Singh, M.B.B.S., D.O.M.S., etc., was unanimously elected Hon. Joint Secretary in place of Dr. Baxi.

Capt. G. L. Sharma, M.B.B.S., was elected Treasurer for the forthcoming Annual Punjab Provincial Medical Conference.

HARNAM SINGH,
Hony. Jt. Secretary.

SAHARANPUR DISTRICT BRANCH

Proceedings of the meeting held on the 26th July, 1937, at the residence of Dr. Nawal Behari Mathur, M.B., B.S., at 5 p.m. under the presidentship of Dr. Shanker Lal Gupta, M.B.B.S.:

1. Resolved that Dr. A. Samad of Cawnpore be elected President of the U.P. Provincial Branch for the next year.

2. Resolved that Dr. Shanker Lall Gupta be elected Vice-President of the Saharanpur Branch in place of Dr. I. N.Saxena who has been transferred to Fyzabad.

3. Resolved that Dr. Nawal Behari Lall Mathur, M.B., B.S., be elected representative of this Branch in the Executive Committee of the Indian Red Cross Society, Saharanpur Branch, in place of Dr. I. N. Saxena, transferred.

Dr. D. Bharadwaj, L.R.C.P. & S., then delivered a lecture on " Rights of the Medical Practitioners and Patients."

This was followed by a discussion in which every member took part.

The meeting came to a close with a vote of thanks to the Chair.

N. B. L. MATHUR, M.B., B.S.,
Hony Secretary.

TINNEVELLY DISTRICT MEDICAL ASSOCIATION

A meeting of the Association was held at Courtallum on the 30th July last at the Travancore Dewan's Bungalow otherwise called ' Scorpion Hall.' Fifty-one (51) members from various parts of the District attended the meeting. Dr. A. L. Ananthanarayana Iyer, M.B.B.S., Assistant Surgeon, Government Hospital, Tenkasi, was mainly responsible for the excellent arrangement made for the boarding and other conveniences of the members. Dr. K. Narayanaswami Iyer, L.M. & S., Civil Surgeon, Tuticorin, and

five members led by Dr. Natesan, M.B.B.S., of the Madura Medical Association, and one doctor from Chittor District also graced the meeting.

After bathing under the falls and light refreshments the members were entertained to excellent music at the close of which the regular meeting began at about 11 a.m. under the presidentship of Lt.-Col. T. S. Shastry, I.M.S., when Dr. K. Rama Ayyar, M.B.B.S. (Andhra), read the minutes of the proceedings of the last monthly meeting held at Papanasam on the 26th June, 1937, which were adopted.

Resolutions (1) touching the demise of Dr. M. L. Kamath, M.D. & C.M., retired Civil Surgeon and a distinguished Physician of Madras and of Dr. B. G. S. Acharya, M.B. & C.M. (Madras), D.O. (Oxon), & F.R.C.S. (Edin.), Professor of Ophthalmology, Lucknow University and a distinguished Eye Surgeon, and (2) congratulating the Hon'ble Dr. U. Rama Rao, on his election as President of the Madras Legislative Council, the Hon'ble Dr. T. S. Rajan, L.R.C.P. (London), M.R.C.S. (England), on his appointment as Principal, Madras Medical College, Madras, were unanimously passed having been moved by the President.

Dr. P. S. Srinivasan, Sub-Assistant Surgeon of the Government Headquarters Hospital, read out clinical notes on the following interesting cases which were operated and treated at the Government Headquarters Hospital, Palamcottah:—

1. A case of œdematous scalp, (2) A case of œdematous face.

The following specimen in connection with the above was also shown to the members:—

Abscess of brain due to fracture of skull.

Dr. A. L. Ananthanarayana Iyer exhibited two very obscure cases of Chorea and Morvan's disease. On these there was a keen discussion.

Dr. J. J. Joseph, L.M. & S., the Chief Leprosy Officer of the Presidency, spoke on the diagnosis and treatment of Leprosy.

After discussion, Lt.-Col. T. S. Shastry, I.M.S., summed up the salient and important features of all the cases and thanked the guests for their presence and fellowship. Dr. Natesan of Madura Medical Association thanked the Tinnevelly District Medical Association for their kind invitation and hospitality, and very much appreciated the cordial fellowship and instructive nature of the day's gathering and meeting, and applauded the Tinnevelly District Medical Association for leading in this line. The President also thanked the Dewan of Travancore for his readiness and kindness in placing his spacious Bungalow at their disposal. Thereafter an excellent dinner brought the happy gathering to a close at 3 p.m.

Health Exhibition

In connection with the monthly meeting of the Association a Health Exhibition was held at the Valangapuli Vilas under the Presidentship of Dr. K. Narayanaswami Iyer, L.M. & S., Civil Surgeon, Tuticorin. Col. Shastry *inter alia* observed that the tanklike pit adjoining the falls whereto all the water from the falls finds its way is a sink of impurities. Persons of all classes wash their cloths in the pit apart from drinking the water therefrom. These were calculated to breed diseases. The need for a stricter enforcement of sanitation was also stressed by Col. Shastry in the course of his speech. He appealed to the Panchayat Board for taking necessary steps in this direction, and to the residents to urge the Government to do the needful, to maintain the bathing place and its vicinity in a sanitary condition. He said that a special law may have to be passed (1) creating a sanitary authority with numerous "Sanitary Teachers," " Sanitary Constables " and a " Sanitary Magistrate " to teach sanitation, to detect the polluters and to punish them promptly and effectively, (2) to organise a drainage system and (3) adequate number of urinals and latrines and (4) to supervise the whole system, as also (5) to provide funds for the above organisation.

Rao Sahib C. N. Krishnaswami Naidu Garu, the Deputy Superintendent of Police, Courtallam, in declaring the Exhibition open made particular reference to the proposal under examination for the enforcement of Brothel's Act at Courtallam. He said that the police were doing their best to prevent people fouling the area. The Health Inspector Mr. K. V. Sesha Iyengar of Tenkasi took those present round the exhibits explaining to them the purport of each exhibit. The visitors about a hundred strong, contained a large number of school teachers and children and some of the bathing population. The pleasant function came to a close late in the evening.

K. Rama Ayyar,
Secretary & Treasurer.

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The Tinnevelly District Medical Association gave a reception to the Hon'ble Dr. T. S. S. Rajan,

L.R.C.P. (London), M.R.C.S. (England), Minister in charge of Medicine and Public Health with the Government of Madras, on Sunday, the 8th of August, 1937, at 4-30 p.m., at the St. John's College, Palamcottah.

The function began with a tea party given by Lt.-Col. T. S. Shastry, I.M.S., the President of the Tinnevelly District Medical Association and about one hundred members of the medical profession including 76 members of the Association attended the meeting. Dr. K. Narayanaswami Iyer, L.M. & S., Civil Surgeon, Tuticorin, and many of the members of the Independent Medical Practitioners' Association of Tinnevelly also attended the function by invitation. Among the non-medicals Mr. V. Ramakrishna, I.C.S., Collector of Tinnevelly, M. R. Ry. Rao Bahadur, I.C., Iswaran Pillai Avl., and Mr. Daniel Thomas, B.A., and the Commissioners of the Municipalities of Tinnevelly and Palamcottah attended the meeting. During tea Lt.-Col. T. S. Shastry, I.M.S., took the Hon'ble Dr. T. S. S. Rajan round and introduced every member to him.

Dr. L. Mahadevan, M.B.B.S. (Madras), D.O.M.S. (Lond.), one of the members of the Association entertained the gathering with music on Gottuvadyam. Then Lt.-Col. T. S. Shastry, I.M.S., in a short speech welcomed the Hon'ble Dr. T. S. S. Rajan. In his speech he made mention about Dr. T. S. S. Rajan's abilities as a medical man and his services to the country. He also gave a short sketch of his career from the time of his college studies up to his becoming the Cabinet Minister in charge of Medicine and Public Health.

Then the Hon'ble Minister Dr. T. S. S. Rajan delivered his address. He mentioned that surgery was the easiest thing to practise if one knew what he was doing and what to do when he encountered difficulties. He laid emphasis on a clear knowledge of practical anatomy before one took to surgery. "Surgery," he said, "is the cheapest thing to practise as the capital investment is not more than Rs. 1,000/- to start with." He stated that self-confidence was of paramount importance in the practice of surgery. He took up the Cabinet Ministership with very great reluctance because he liked surgery much more and that he would like to continue as a surgeon as long as his hands could hold the scalpel steadily. But the call of the country had got a greater claim, and so he had to respond to it. In conclusion, he referred to some of the common surgical ailments like strangulated hernia and appendicitis, which any man of proper medical training must be able to tackle successfully in any village, depending on boiling as the means of sterilisation.

Dr. T. N. Govinda Ayyar, M.B. & C.M., proposed a hearty vote of thanks to the Hon'ble Dr. T. S. S. Rajan, for his readiness in accepting the invitation of the Tinnevelly District Medical Association. He also thanked Colonel Shastry, I.M.S., for his kindness in organising this most enjoyable function and entertainment and also proposed a vote of thanks to all the members and other medical men and non medical guests.

K. Rama Ayyar,
Secretary & Treasurer.

RAMNAD DISTRICT MEDICAL ASSOCIATION

The July meeting of the Ramnad District Medical Association was held on Saturday, the 24th July, 1937, at the S. M. S. High School, Karaikudi under the presidentship of Captain B. Dayananda Rao. There were 24 members present. In his opening remarks the President invited the members to hold the meeting at Ramnad in August, 1937 and said the Madura Medical Association may also be invited to hold their meeting at Ramnad. He also proposed that once in two months a combined meeting of the two associations may be held, the place of the combined meeting being once at Madura and at the other time at some central place in Ramnad district and this was agreed to by the members.

A paper on "Transverse presentation in moffusil" was read by Dr. J. R. Moses, L.M.P., of Ramnad which was followed by discussion on the subject.

The following resolution was unanimously carried:—

> "The Ramnad District Medical Association congratulates the Hon'ble Dr. T. S. S. Rajan on his appointment as the Minister of Public Health to the Government of Madras and this meeting authorises the Secretary communicate to him the same."

The meeting then terminated with the vote of thanks.

K. S. Srinivas,
Hony. Secretary.

ALL-INDIA INSTITUTE OF HYGIENE AND PUBLIC HEALTH

Fascinating details are given in the latest annual report of the All-India Institute of Hygiene and Public Health, just published, of researches conducted at the Institute during the year 1936.

Side by side with basic researches there were interesting investigations bearing on public health problems of the country.

One such problem was cholera, which has made Bengal its home from where big epidemics occasionally spread over vast areas in India and beyond. The causes of endemicity of cholera in Bengal were investigated both in the laboratory and in the field, and in these investigations other research laboratories too gave active co-operation. Intensive statistical analysis of recorded cholera mortality in different parts of Bengal has shown that the incidence of the disease is not uniform throughout the Province. It has, however, been possible to define certain areas which are highly endemic. In one of these areas continuous field observations were carried out and a large amount of information was collected, the analysis of which, it is hoped, will clear up certain important points in regard to the cholera problem. Statistical studies were also carried out with a view to develop a method of forecasting cholera epidemics so as to forewarn the public health authorities. In addition, there were basic researches into the chemical constitution of cholera vibrio in relation to the virulence of the organism, and important results have been obtained. Attempts have also been made to find simpler methods to determine the chemical constitution of these vibrios.

Epidemic dropsy is another disease which received special attention. The controversy regarding its etiology dates back to 1877, and many theories have been advanced, but none of them have proved entirely satisfactory. Intensive field investigations carried out in Assam, Bengal and Bihar have indicated that certain samples of mustard oil may be to blame. As a result of a series of control experiments including experiments on human volunteers, it has been strongly suggested that certain supplies of mustard oil contained a substance which may be responsible for the production of symptoms of epidemic dropsy. While it is possible that the term epidemic dropsy is at present loosely used and covers more than one disease condition, much can be done, says the report, to prevent development of the disease by preventing the distribution of mustard oil of this kind. The nature of the poisonous substance and the source from which it is derived is at present under investigation. The problem is as yet by no means solved.

The problems of nutrition which are now very much before the public eye were also investigated in certain aspects. A large number of common Indian foodstuffs were examined for their salt and vitamin contents, particular attention being given to Vitamin B. Nutrition surveys for the determination of the quantity and quality of food and nutritional status of the children were carried out in certain institutions at Calcutta and at Ferozepore in the Punjab. It was found that the main deficiency in the diet was the lack of good types of protein and of certain salts, and that this defect in the dietary, which could be corrected by milk, was associated with the poor physique of the children. The caloric value of food required by Indian children was found to be the same as that required by English children. Studies were also made on the relation of cataract to vitamin B defect and on certain chemical properties of blood in relation to anæmia and other diseases. A fact of great importance which emerged was the desirability of combining fat and if possible meat with food containing green vegetables and carrots. These foodstuffs are rich in a substance called carotene, which is the main source of vitamin A in India, while fat helps in the absorption of carotene and meat in its conversion into vitamin A.

In the Malaria Section attention was chiefly given to investigations into black water fever, which occurs in certain highly malarious localities. Black water fever is a highly fatal affliction but unfortunately scientists are still in the dark as to its causes and its treatment. Studies of a similar condition in monkeys show that it was caused by paucity of the balance of certain chemical constituents of blood due to lesions in the liver and the adrenal glands. Partial success in the treatment of the disease in many cases was obtained by basing treatment on these findings. Investigation of the disease was extended to human cases and promising results were obtained. Other malaria problems studied included investigations into the part played by certain important malaria carrying species of mosquitoes and the spread of malaria in Bengal and certain basic studies on malaria parasites. Experiments were also conducted to test the claims made by the inventors of the Entoray machine for its efficacy in killing mosquitoes, but the claims could not be substantiated.

Intensive studies were also made into the problem of tuberculosis, and among other points brought out by these studies there was one which demonstrated the danger from exposure of contacts specially of children to open cases in the family.

Loss of life associated with maternity was another subject investigated. The results obtained should give food for thought to social workers and particularly to those who are interested in the well-being of mothers. It was found that in 94 per cent. of deaths due directly to child-bearing, a primary avoidable factor was present, the main cases of maternal deaths being due to infection arising out of uncleanliness during childbirth, poison in the system and accidents of labour.

Apart from research, training is another aspect of its activities in which the Institute presents an interesting

record of progress. It may be noted that the Institute provides advanced training for public health workers on an All-India basis. The principal course of training offered by the Institute leads to the Diploma in Public Health of the University of Calcutta and Diploma in Public Health and Hygiene of the School of Tropical Medicine and Hygiene, Bengal. In this training the School of Tropical Medicine takes an important part. Admission has to be restricted to 30 students on account of limited laboratory accommodation. In previous years some of the seats remained vacant, but a noticeable feature of the year under report was that there were 74 applicants of which 26 were admitted for D. P. H. and 5 for D. P. H. and Hy. Students came from all Provinces of India except Sind and Orissa, and 15 were employees of the Central and Provincial Governments, local bodies or Indian States.

It may be recalled that the Institute was established with funds provided by the munificent donation of Rs. 17.87 lakhs from the Rockefeller Foundation of the United States of America. But the responsibility for its maintenance was undertaken by the Government of India. Unfortunately, however, the opening of the Institute coincided with a period of acute financial stringency, and thus the full development originally contemplated had to be deferred. As a result, four sections dealing with public health administration, Malariology, Biochemistry, Nutrition and Epidemiology and Vital Statistics have been functioning for the past four years, and the two sections on Sanitary Engineering and Maternity and Child Welfare were kept in abeyance. With a return to improved financial conditions, the Government of India who have all along been conscious of these outstanding needs of the Institute have added to it the two new sections on Sanitary Engineering and Maternity and Child Welfare from April, 1937.

CENTRAL BOARD OF HEALTH

The idea of a Central Advisory Health Board is no new conception. Between 1909 and 1914 three notable Sanitary Conferences were held in Bombay, Madras and Lucknow under the Presidentship of the Hon'ble Member for Education ; two Bacteriological Conferences were held in 1918 and 1919 ; and three Conferences of provincial Sanitary Commissioners took place in 1918, 1919 and 1920. These led up to the establishment in 1921 of a Central Health Board to advise the Central Government and the Provinces. Unfortunately only one meeting of this Board was held before the 1923 retrenchment axe fell. Then in 1927 the late Sir Fazl-i-Hussain suggested the resuscitation of the Public Health Board, but the proposal did not materialise owing to financial difficulties, although the majority of Local Governments in 1928 had decided in favour of it. The Indian Statutary Commission stressed the need of improving certain aspects of public health by a wider organisation staffed by competent officials whose function would be to co-ordinate and encourage this work. A further attempt to constitute a Central Board of Health was therefore made in 1933 but again financial reasons intervened. The necessity for periodical consultation and for interchange of information between Provinces and States and between them and the Central Government became more and more apparent. The Government of India Act provided for the constitution of advisory Councils in different Governmental fields of activity ; moreover, machinery of the kind was already in existence for matters relating to Agriculture, Animal Husbandry and Education. It was therefore no great surprise when H. E. the Viceroy, in his address to the Indian Legislature in September, 1936, announced his intention of establishing a Central Advisory Board of Health. Shortly afterwards the Government of India issued a resolution constituting the Board and the inaugural meeting was held in Simla on 22nd and 23rd June, 1937.

The Board was constituted as follows:—

(1) The Hon'ble Member in charge of the Department of Education, Health and Lands as Chairman.

(2) Two representatives of the Government of India, *viz.*, the Secretary, Education, Health and Lands Department and the Director-General, Indian Medical Service.

(3) Provincial Ministers in charge of Public Health.

(4) One member elected by the Council of State.

(5) Two members elected by the Legislative Assembly.

(6) A representative of the Railways.

(7) A representative of the Defence Department.

(8) Three representatives of Indian States (Hyderabad, Mysore and Jodhpur.)

(9) The Rani of Sherkot.

(10) The Public Health Commissioner with the Government of India as *Ex-officio* Member-Secretary.

That the important part, which the Board might be expected to play was recognised by all Provincial Governments, was made evident by the fact that most of the Provincial ministers found it possible to attend the meeting. Where other engagements prevented their presence, the Ministers were represented by the Government Secretaries of the Local Self Government and Public Health Departments. In addition two Inspector Generals of Civil Hospitals and most of the Provincial Directors of Public Health attended as advisers to the Ministers and Secretaries.

H. E. the Viceroy honoured with his presence the opening session of the Board. In requesting His Excellency to open the meeting, Sir Jagdish Prasad, the Chairman, dwelt upon the serious health problems with which India was faced. He indicated how industrialisation had exposed its people to new dangers owing to urban congestion and that more heed must be paid to the question of housing, water supplies, drainage and food. He also invited attention to the very high rate of infant mortality and to the generally bad sanitary conditions which impaired human efficiency in every walk of life.

Reminding the members of the Board that artificial, provincial and State boundaries were no barriers to the spread of disease, the Chairman went on to express the belief that the Advisory Board of Health would provide a great opportunity for every one concerned to pool experience and effort in the common task of improving the health of the people of India. Sir Jagadish Prasad emphasised the fact that the presence of His Excellency the Viceroy was a source of great encouragement to the Board and hoped that His Excellency's inauguration of the meeting would not only give its deliberations their proper significance in the estimation of the public, but would stimulate members of the Board in their efforts to bring a little more sunshine and gladness into Indian homes.

His Excellency then delivered his inaugural address which has already appeared in the press. H. E. the Viceroy not only welcomed the members of the Board on his own behalf and that of the Government of India, but expressed his pleasure at being able to open the first meeting. In the course of his address H. E. made pointed reference to a number of subjects which in his opinion demanded early consideration and expressed the emphatic opinion that although the functions of the Board were purely advisory in nature, such recommendations as might be made by the Board would be of the greatest value to both provincial and states Governments.

After H. E. the Viceroy had withdrawn, the Board commenced its deliberations. The following items had been placed on the agenda:—

1. Procedure.
2. Quinine Supplies in India.
3. Organisation of the Provincial Public Health Departments.
4. Nutrition Surveys.

In taking up the first item the Chairman referred to the three main functions of the Board. These were:—

(1) ' to act as a Central Information Bureau on all public health matters affecting India and as a clearing house for such information.'

(2) ' to advise on any matters referred to it by the Central or by Provincial Governments '; and

(3) ' to make suggestions to Government on any matters affecting public health in India to which the Board considers that Governments attention should be drawn.'

In regard to the first of these functions, the desirability of a wider publicity in regard to health matters was stressed by several members of the Board, and the suggestion was made that such questions as infantile mortality, malaria, tuberculosis, etc., should be dealt with in short and succinct bulletins which should be widely distributed. A further suggestions was made that the information contained in the Public Health Commissioner's annual reports should be issued in separate notes or bulletins written up in popular language. The translation of these notes into the various vernaculars was, however, the function of Provincial and States Directors of Public Health. The same methods, it was considered, should be adopted in the case of the reports of the Scientific Advisory Board, Indian Research Fund Association and the papers published in the Indian Journal of Medical Research, Records of the Malaria Survey of India and other journals.

The Secretary explained what had been done during the past two years in obtaining information in regard to the incidence of epidemic and other diseases from Indian States. He also outlined the methods which have been adopted for exchanging that information between Provinces and States and *vice versa*, and hoped that this system would be further developed.

The note in the Memorandum on the functions of the Board as a Central Information Bureau was generally approved, and it was decided that the methods outlined there should be followed and developed.

As regards the Board's function as an advisory body to the Central and Provincial Governments, it was agreed that every subject referred to the Board should be accompanied by an explanatory memorandum. Each memorandum with a note from the Secretary should be circulated to the members of the Board, so that they might have the opportunity of making such comments as they desire. The Chairman stressed the necessity for leaving a considerable latitude to him and the Secretary in preparing the agenda for further meetings.

In regard to the third function of the Board, it was decided that any member should be at liberty to forward to the Secretary proposals and suggestions with an explanatory memorandum in each case.

The Board agreed to the formation of *ad hoc* committees and decided that each should ordinarily consist of not more than 5 members, although these members will have power to co-opt such other persons as they thought necessary.

The number and size of *ad hoc* committees and the frequency of meetings, it was decided, should be restricted as far as was compatible with their duties.

At a later stage of the proceedings two *ad hoc* committees were appointed to report on:

(a) Maternity and child welfare work in India, including the training of maternity and child welfare workers and the organisation of maternity and child welfare schemes for urban and rural areas ; and

(b) Food adulteration and the methods and standards in force for its control in different parts of India.

The membership of these *ad hoc* committees was left over for further consideration. The reports of these committees would in due course be laid before the Board, and, if accepted, would then be sent for consideration to all local Governments' and States' Governments along with the Board's recommendations.

It was decided that the Board should hold its annual meetings in November or December in Delhi each year.

As regards the question of quinine supplies for India, it was generally recognised that the problem was one of the most difficult of the many in the field of preventive medicine in this country. The memorandum on the subject which had been circulated to members before the meeting indicated some of these difficulties and members generally were in agreement with the views expressed therein. To the question whether India should attempt to extend cinchona cultivation in order to satisfy its quinine requirements the reply of members was in the affirmative and the Board were unanimous in supporting the proposal to use Rupees one lakh which had been set aside by the Indian Research Fund Association for investigation and the possibilities of extending cultivation of cinchona. Closely associated with this question is the cost of production. It was felt that when the proposed investigation was completed it should then be possible to determine whether or not there was a possibility of reducing the price of cinchona products to a level which the ordinary villager could afford. The opinion was that if this investigation was able to indicate possibilities of reduction in the price of the drug the expenditure involved would be very much worth while. The discussions also included references to improved and cheaper methods of distribution. Various suggestions were made in regard to methods of distribution and to the popularisation of quinine among the general population. Eventually the following resolutions were passed by the Board:—

(1) The Board considers that policy should be directed to making India self-supporting in the matter of quinine.

(2) The Board welcomes the proposal of the Indian Research Fund Association to institute an inquiry by an officer experienced in cinchona cultivation, in association with a Soil Chemist, on (a) what further areas in India are suited to cinchona cultivation and (b) what would be the cost of production in such areas.

(3) The Board considers that the price at which quinine is sold at present in India is too high, as it is greatly in excess of the cost of production, that producing Governments in India should not regard the production of quinine as a source of profit and that even if any profit accrues from its sale such profit should be earmarked for expenditure on public health.

(4) The Board while taking note of the position that the control of the production, distribution and sale of quinine is now a purely Provincial function, considers that in the interests of India as a whole the question of the advisability of the resumption of such control by the Central Government should be seriously considered.

(5) The Board considers that much more intensive propaganda than has hitherto been adopted is necessary to bring home to the people, especially in the rural areas, the utility of quinine as a cure against malaria and that the possibilities of its cheaper and more widespread distribution through non-official and other agencies should also be sympathetically explored. The Board further considers that steps should be taken to ensure that the products of cinchona sold in India are unadulterated.

In opening the discussion on the organisation of Public Health Departments the Secretary reminded the Board that the memorandum which had been circulated to members dealt only with one aspect of the general campaign for the promotion of the health of the people and whilst stressing the fact that a Public Health Department had a number of functions which were distinct and separate from those of a Medical Department, he also laid importance on the necessity for constant co-operation between these departments, if the best results were to be obtained. The memorandum emphasised the necessity for wholetime. Health Officers both in districts and municipalities and indicated in tabular form how very deficient most parts of India were in regard to qualified health officers. The suggestions were made that in each Provincial Headquarter there should be constituted a Provincial Health Board and that in each district headquarter some form of Health Bureau or Committee should be formed in order that close co-operation might be maintained between the Public Health, Medical and other Departments.

The importance of revising the curriculum for medical students was also stressed, in order that the young medical practitioner might be given a better idea of the preventive aspect of medicine and of the necessity for maintaining the preventive outlook in his day to day practice.

The discussion on this item on the agenda was both long and interesting and most members of the Board and a considerable number of their advisers took part. The general feeling was that the time had come for a wide development of district and municipal health organisations and the resolutions which were passed on the subject are a clear indication of the acceptance of the views outlined in the memorandum. The resolutions were as follows:—

(1) The Advisory Board of Health having considered the facts set out in the Memorandum dealing with the organisation of Public Health Departments recommends that all Local Governments should possess powers (*a*) to form provincial Public Health Services, (*b*) to require municipalities and local boards to appoint medical officers of health, and (*c*) to lay down suitable conditions for the recruitment, qualifications and terms of service of health officers. The Board further recommends that where Local Governments do not possess these powers the necessary legislation should be passed with the least possible delay.

The Board is further of opinion that for the development of public health organisations and the formulation of public health schemes in municipalities and districts, adequate funds should be allotted by Provincial Governments and Local bodies. To the same end the system of

percentage grant-in-aid from Provincial Governments to their local bodies is one which should be encouraged.

(2) In order to promote co-ordinated effort in preventive medicine between the Medical and Public Health Departments, the Board recommends the establishment of a Central Health Board (or Committee) at the headquarters of each Province and of a Health Bureau or Committee in each district.

(3) The Board desires to bring to the notice of all Governments, Provincial Medical Councils and the Medical Council of India the necessity for improvement in the teaching of hygiene and public health as part of the Medical Colleges and Schools curriculum for medical qualification and registration.

In regard to Item IV which dealt with Nutrition Surveys, the Secretary in opening the discussion stated that it was now clear that diet was the most important single factor influencing general health and development. The Memorandum on the subject which had been circulated to members before the meeting indicated what the Government of India and the Indian Research Fund Association had been and were doing and also made clear the importance of expanding both research and survey work in the field.

Although a number of the provinces had availed themselves of the present opportunity afforded at the Nutrition Research Laboratories, Coonoor, for the training of one of their public health officers in nutrition work, others apparently had not realised the significance of this branch of public work. It was hoped that those not presented at the present course would be able to depute one of their officers to the next course of training. The fact that so many people in India presented malnutritional conditions of different forms indicated the great importance of further research and investigation and the presence of trained men in Provincial Public Health or Medical Departments would make it possible to carry out the necessary investigations and surveys.

Closely allied with the whole question of nutrition is that of food adulteration. This is another field in which officers trained in nutrition work should be able to play an important part, because in India food adulteration is known to be practised to a very great extent.

Reference was also made to the necessity for spread of knowledge in regard to food and nutrition. The Health Bulletin recently prepared by Dr. Aykroyd was used as an illustration of the methods to be employed in this connection and here it may be added that the first edition of Dr. Aykroyd's Bulletin, numbering 10,000 copies, has already been sold out and that demands for it are being received in such large numbers that the Bulletin is likely to be a best-seller for months to come.

Several members of the Board took part in the discussion and expressed general approval of this line of work and of the methods which had been employed. Considerable anxiety was also shown in regard to the health conditions revealed by the investigations mentioned in the Memorandum and the four resolutions which are passed by the Board give expression to that anxiety. The resolutions read as follows:—

(1) The Board recommends to all Local Governments the desirability of training at Coonoor a number of their medical and health officers in nutrition work so that they may be able to advise on the problems associated with malnutrition and deficiency disease.

(2) The Board recommends to Local Governments the desirability of conducting dietary surveys in each province and of instructing their medical, Public Health, Agricultural and other departments to co-operate in every possible way with the workers carrying out these surveys.

(3) The Board recommends to Local Governments the necessity for providing funds for the dissemination of suitable propaganda material in regard to foods, etc., based on Health Bulletin No. 23 " The Nutritive value of Indian foods and the planning of satisfactory diets " and on such additional material as may be made available by the Director, Nutritional Research, and by others.

(4) The Board is of opinion that the Government of India's expenditure on nutrition research is inadequate and should be increased.

The valuable suggestion was made by Colonel Norman Walker that the Central Advisory Board of Health should act in its capacity as a clearing house for type designs, model byelaws, etc., used in different Provinces and States. The Board agreed that its Central Information Bureau should make arrangements to obtain from Provinces and States public health type designs now in use with any explanatory memoranda which might be available. The Bureau should also make similar arrangements to obtain copies of all bye-laws in force which deal with public health subjects, such as buildings, markets, slaughter houses, water supplies, etc., etc. Copies of all such material should then be sent to all Public Health Departments in Provinces and States so that each would be aware of what was being done in other parts of India.

The Board also decided to appoint a committee to examine and report on joint civil and railway and cantonment health problems, especially in relation to the control of Malaria.

During the two days the meeting lasted, it was made evident that the Board was likely to fulfil the hopes expressed by His Excellency in his opening address. The general discussions were both useful and illuminating and when the concluding remarks were being made by individual members and by the Chairman a feeling of satisfaction was generally made apparent. The vote of thanks to the Chairman included the expression of the members' indebtedness to him for his keen interest and sympathetic attitude.

INTERNATIONAL CONGRESS ON HÆMATOLOGY

The first meeting of the newly formed German Hæmatological Society took the form of an international congress held at Munster, Westphalia, from May 10th to 13th.

Prof. Victor Schilling (Munster), who presided, gave an introductory address on the historical development and modern applications of scientific hæmatology. Outlining the gradual advance of hæmatological knowledge until the end of the nineteenth century, he dealt in detail with the work of the great hæmatologists of the early twentieth century and the foundation of the old German Hæmatological Society in 1908. He then reviewed the advances made in the last thirty years which would provide the themes for discussion at the congress.

The scientific communications were opened by a paper by Prof. Ludwig Aschoff (Freiburg), who discussed the

Monocyte Question

from the anatomical and histopathological standpoint. Reviewing his own work and that of others he came to the conclusion that his original view that monocytes were derived from tissue histiocytes or sinus lining cells could not be maintained and that it was most probable that they arose from undifferentiated mesenchymal elements in lymphoid tissue and were directly transferred to the blood stream, as monocytes were never found in the lymph. He emphasised the distinction between monocytes and lymphocytes and went on to discuss the relationship of the plasma cell with the lymphocyte, questioning whether the marrow plasma cell was identical with that of the connective tissue, and suggested that there was still much work to be done both from the histological and cytological aspects in glandular fever and experimental B. monocytogenes infections.

The President surveyed the clinical aspects of the subject and held that few cases of true monocytic leukæmia had been described; his criteria being, in addition to the blood picture, a leukæmic infiltration of the organs. Rather surprisingly he maintained that the bone-marrow should show no alteration. Dealing with other forms of monocytosis, he mentioned the false monocytosis sometimes found when the specimen of blood has been collected from the ear; it only occurs if the first drop of blood is used for examination and is most common in cyanotic patients. He suggested that this was static phenomenon and produced convincing evidence that the cells were not shed vascular endothelium as has been suggested.

Dr. E. Lauda (Vienna) reviewed the relation of the spleen to blood disorders, laying especial stress on the evidence for an endocrine function which controlled bone-marrow activity and the part played by the spleen in iron metabolism. He believes that splenic siderosis is indicative of cellular dysfunction rather than increased activity and that there may be both active and passive hæmolysis in the spleen, of which the latter is the more common.

The afternoon was occupied by a series of admirable papers on

Pathology of the Bone-Marrow

Prof. H. Schulten (Hamburg) described the normal cytology and technique of sternal puncture. He upheld the trialistic view of hæmopoiesis but questioned the existence of the hæmocytoblast. He was in doubt as to the difference between a pro-erythroblast and pro-megaloblast, although emphasising that the megaloblastic family of erythrocytes must be clearly distinguished from the normal erythroblastic series. He suggested that mature cells did not remain long in the marrow.

This communication was followed by an account of the pathology of the bone-marrow by Prof. Henning (Furth) which was one of the best contributions to the Congress. He described the changes in sternal puncture preparations found in many blood diseases. In pernicious anæmia, for example, in addition to the megaloblastic proliferation, there are abnormalities in the granulocytes and megakaryocytes, in both of which hypersegmented giant forms are seen; these revert to normal after liver therapy. This change together with an enormous erythroblastic activity can be seen twenty-four hours after the first injection of liver. Prof. Henning doubts whether one should accept the idea of two distinct erythrocytic series—the megaloblastic and erythroblastic. He said that he had observed a reduction of megalocytes in the circulating blood before the increase of the reticulocytes and although there were equally striking alterations in the granulocytes after liver therapy yet it had never been suggested that there were two families of these cells.

Arsenic was found to produce an increase in ripening of the megaloblasts in pernicious anæmia, but only of pathological ripening with the result that there was a considerable increase of megalocytes. Marrow puncture in the leukæmias was of little value except in the aleukæmic cases when it was of great diagnostic help. In agranulocytosis the cytology varied: in some cases there was an absence of free elements with a proliferation of reticulum cells—this was the so-called "empty marrow"; in other cases there was an apparently normal marrow but the most mature cells were lacking; and in the third type there was a great increase in myeloblasts or pro-myelocytes. In every case the cells were abnormal, showing vacuolation and nuclear changes. In glandular fever there was no cellular proliferation in the marrow and the abnormal cells found there were derived from the circulating blood. Prof. Henning described the various changes found in infectious diseases and the value of

sternal puncture in the diagnosis of parasitic diseases—malaria, kala-azar, etc. Finally, he discussed the value of bacteriological culture of bone-marrow. In a series of 350 cases of typhoid fever a positive culture was obtained from the sternal puncture material before a growth could be obtained from the circulating blood.

Prof. Rohr (Zurich) discussed the mechanism controlling the entry of cells into the circulation and suggested that the bone-marrow could be regarded as a closed or controllable system whereas the spleen was an open system; in conditions such as the leukoses, in which there was myeloid proliferation in the spleen and liver, the abnormal cells in the circulating blood were derived from these organs rather than from the bone-marrow.

Dr. R. Klima (Vienna) described the changes in the bone-marrow in multiple myelomatosis and Hodgkin's disease. In cases in which there was clinically a localised myeloma in one of the long bones, he had invariably found myeloma cells in the sternal puncture. He regarded myelomatosis as a systematised proliferation analogous to the leukosis, and suggested that the myeloma cell was closely related to the marrow plasma cell which he derived from the myeloblast but distinguished from the plasma cell found in the connective tissue in chronic inflammatory conditions. In Hodgkin's disease, although at autopsy the bone-marrow was involved in 70 per cent. of cases, no characteristic changes could be found by means of sternal puncture during life. Dr. Klima believed, however, that diagnosis could be made by means of lymph node puncture; but neither his criteria nor his conception of the typical cytology appear to correspond with the present pathological views.

The second day opened with an account of

Blood-Platelets

by Prof. Hittmair (Wels, Austria). He discussed difficulties of enumeration and suggested that for ordinary purposes a visual estimation of their numbers in supravital preparation was sufficient. When a numerical count was made the method must be stated owing to the enormous variation in normals with the different techniques (250,000 Fonio might read 900,000 Hoffmann). Prof. Hittmair upheld Wright's theory of a megakaryocytic origin for blood-platelets although as he admitted he was putting his head into the lion's mouth by doing so at Munster. (Prof. Schilling maintains that the platelets represent the shed nuclei of the erythrocytes and that megakaryocytes are merely histiocytic in nature).

In bone-marrow studies, however, the number of platelets was the same as that of the circulating blood and the formation of platelets from megakaryocytes could only be observed under abnormal conditions; Prof. Hittmair upheld Rohr's view of an explosive rupture of the megakaryocyte in their formation. He discussed the changes in platelets in various diseases and their relation to blood coagulation which, he felt, was only secondary. An animated discussion followed this paper in which the President put forward his views and demonstrated the method of rapid fixation of the blood by which he believed he could substantiate his theory. Prof. Voit (Solingen) showed that platelets contained no thymonucleic acid, although all cell nuclei including those of isolated erythrocyte nuclei contained large quantities of it.

Prof. Werner Schultz (Berlin) read a paper on

The Aplasias

with special reference to the hæmorrhagic diathesis. He described the changes in aplastic anæmia and agranulocytosis, mentioning that in the latter although the platelets, bleeding time, and coagulation time were normal, yet there was a severe fibrinopæmia. In discussing the hæmorrhagic diseases he emphasised the distinction between blood coagulation and the stopping of hæmorrhage. The latter he associated with capillary function, showing that in a normal person the bleeding time was almost the same whether the investigation was carried out in the air, under water, or even under heparin, however, hirudin which acted on the capillaries as well as on the coagulation mechanism prolonged the bleeding time; further, the bleeding time is not markedly prolonged at O. C. although blood does not coagulate at that temperature.

Leucocytes—Parasitology

In the afternoon Prof. Hoff (Wurzburg) discussed the dynamics of leucocyte regulation and Dr. Thaddea (Berlin) described changes in the leucocyte adrenaline response in disorders of the suprarenals. In Addison's disease the normal leucocytosis obtained after the subcutaneous injection of 1 mg. of adrenaline is absent but treated cases give a normal reaction; on the other hand in cases of cortical adrenal tumour the leucocyte adrenaline reaction is exaggerated. Dr. Undritz (Orselina-Locarno) described a series of cases showing the inherited Pelger-Huet anomaly of the granulocytes and Prof. Adler (Switzerland) described a new form of inherited granulocytic abnormality in which the nuclei were normal but the cells showed large darkly staining granules.

Prof. Kikuth (Elberfeld) showed that in malarial treatment no drug has been found which attacked the free merozoites. Plasmoquine destroyed the sexual forms, and Atebrin and quinine the asexual forms. Following this Prof. P. Muhlens, director of the tropical institute at Hamburg, demonstrated some excellent cinematographs of the life-cycles of malaria, leishmaniasis, and various types of spirochætes and filariæ.

The last day was devoted to

Anæmia

The President read a paper on the structure of the erythrocytes. He dealt particularly with the relation of reticulation to polychromasia and described the peculiar inclusions found in methæmoglobinæmia and the significance of bartonella-like bodies found in the erythrocytes in anæmia.

Prof. E. Meulengracht (Copenhagen) dealt with pernicious anæmia. Recapitulating his experimental work on

the pig stomach (see *Lancet*, 1935, 1, 493) in which he showed that intrinsic factor was only to be found in the pylorus, duodenum, and cardiac region and was absent from the fundus, he went on to describe his observations in a number of stomachs obtained post mortem from pernicious anæmia cases. These showed a severe atrophy of the fundic region with intestinal heterotopia but practically no change in the pylorus or duodenum—a finding completely the reverse of that which he had anticipated from his animal observations. However, it had been shown that the proportionate amount of intrinsic factor per c.c.m. was unchanged in pernicious anæmia but the total quantity of gastric juice was reduced and he was at present investigating the amount of pyloric and Brunnerian glandular substance in the pernicious anæmia stomach. He believed that regular oral administration was preferable to occasional injections both from the point of view of cost and in minimising the possibilities of nervous changes. He found that a sub-therapeutic dose of stomach powder (3 gr. daily) when taken with liver residues (after extraction of the active factor) which were inactive alone produced a therapeutic result far greater than could be explained by a mere additative effect.

In the discussion which followed it was agreed that oral administration was mostly preferable to parenteral; but it was imperative that the antianæmic substance should be taken in the form of medicine and not as a foodstuff which might be shared with the rest of the family, and in many cases it was only by means of parenteral administration that one could be sure that the patient was receiving adequate and regular treatment.

Dr. H. J. Wolf (Gottingen) read a preliminary communication on the experimental anæmia produced in rabbits by means of typhoid toxin, which was only controllable by the administration of active liver material and might be made to serve as a biological method of assay. However there were considerable difficulties, the chief being the severe illness produced in the animals which often resulted in a fatal outcome before the effect of the anti-anæmic substance could be judged.

Dr. Klima discussed the classification of the anæmias and suggested that it was impossible to group them solely according to cytological, ætiological, or therapeutic criteria and that it was more valuable to consider them from the point of constitutional and familial aspects.

The concluding communication was by Dr. L. Heilmeyer (Jena) on the iron-deficiency anæmias. He dealt in particular with the iron content of the serum in various conditions; this was estimated photometrically and in males found to be 100—150 per cent. and in females 50—100 per cent. but this difference between the sexes disappeared after the menopause. In a normal person, said Dr. Heilmeyer, the serum iron is fairly constant in value, the iron depots being full and any excess iron being excreted by the gut and skin, never by the urine. However, in iron-deficiency anæmias the serum iron is low and the deficiency of storage may be demonstrated by the intravenous administration of 10 mg. of iron and repeated estimations of the serum iron. In a normal person the serum content rises to 400 and then falls very slowly; in deficient iron storage it rises to 180 very slowly; in deficient iron storage it rises to 180 and then quickly falls. In acute infections the serum iron drops to a very low figure even when no anæmia is present and large quantities of iron must be given to maintain it at a normal figure during the infection. The explanation of this is obscure but may be related to the increased activity of the reticuloendothelial system and it is known that a siderosis of the spleen is not uncommon in infections. In untreated pernicious anæmia, the serum iron is almost invariably high and this drops to a normal figure after treatment, but in those cases in which there is deficient iron storage it will drop below normality and it is these cases whose recovery is delayed until iron is given in addition to anti-anæmic principle. Dr. Heilmeyer pointed out that the hæmatological criteria for iron deficiency were hypochromia and planocytosis. Microcytosis was not invariably associated with iron deficiency. As to the form of iron therapy, in most cases it made little difference provided it was given in sufficient amounts and although the ferrous salt was biologically active, ferric salts were readily reduced, probably with the aid of vitamin C. In some cases it was expedient to give a ferrous salt and in severe dyspepsia intravenous iron was to be recommended.

At the conclusion of the meeting Prof. Meulen-Gracht expressed the appreciation of the foreign delegates from the fifteen countries represented at the conference and the arrangements made.

Dr. Storti (Rome) announced that the Italian Hæmatological Society, of whom he was the representative, would hold an International Congress in Rome in 1941 and invited the delegates present to attend it. (*Lancet*: June 12, 1937: pages 1402-1404).

MEDICAL NOTES AND NEWS

FIRST BENGAL PROVINCIAL MEDICAL CONFERENCE

RESOLUTIONS SECTION AND MEDICO-POLITICAL SECTION

Dr. K. K. Sen Gupta, Secretary Resolutions Committee and Dr. T. N. Ghosh, Secretary, Medico-Political Committee have sent the following communication to the members of the medical profession in Bengal.

Dear Colleague,

The first Bengal Provincial Medical Conference will be held in Calcutta on the 12th, 13th and 14th November next under the auspices of the Calcutta Branch of the Indian Medical Association.

This representative meeting of the members of the profession will give us an opportunity to discuss the various problems affecting medical men (particularly in Bengal). With the above object in view we request every member of the Indian Medical Association in Bengal to embody their suggestions in the shape of Resolutions to be moved at the Conference and send them to the Secretary, Resolutions Committee, 67, Dharamtala Street, Calcutta, on or before the 7th October, 1937. Delegates who are not members of the Indian Medical Association may send in resolutions direct to the Secretary, Resolutions Committee.

As we are also organising a Medico-political Section, we would welcome from delegates papers of not exceeding six type-written pages dealing with current medico-political problems which include among other things—

(a) Medical Education.

(b) Problems of Medical Practice including those of panel practice, protection against unqualified medical practitioners and legal defence for medical men in professional matters.

(c) Hospital Policy.

(d) Medical Ethics.

(e) National Health Service including schemes for Public Health Service, National Health Insurance and other forms of Medical Relief.

(f) Standardisation of Drugs.

(g) Establishment of Provident Societies for medical men.

(h) Medical Examination for Life Insurance.

The papers should be addressed to the Secretary Medico-political Section, Bengal Provincial Medical Conference, 67, Dharmatalla Street, Calcutta.

It is expected that delegates will be present in the Conference in person to move their own resolutions or to read their papers. In the case of resolutions coming through a branch the mover may, if necessary, authorise the Branch Secretary to have them moved on his behalf by any other delegate. In the case of unavoidable absence of a delegate who has submitted a paper to be read before the Medico-political Section, the Committee reserves to itself the right to grant permission to another delegate to read the paper on behalf of the writer.

DISAPPROVAL OF I. M. S. REORGANISATION SCHEME

Following the publication of the Government Resolution on the Reorganisation of the I.M.S. various organisations of medical men throughout India including the local provincial branches of the British Medical Association voiced their protest against the policy embodied in the resolutions.

The following are the few amongst the many resolutions passed by different associations in this connection:

BOMBAY BRANCH OF THE B. M. A.

1. "The Bombay Branch of the British Medical Association condemns the Government of India's scheme of reorganization of the I. M. S. under the new constitution, and is surprised to find that instead of abolishing the civil side of the I. M. S., as recommended by the services sub-committee of the first R. T. C. the Government have thought fit to perpetuate the civil side and thus hamper the legitimate growth of the medical services in India envisaged by full provincial autonomy."

2. "The Bombay Branch considers the provision of European I. M. S. officers for the medical treatment of

Europeans and their families in the convenanted services a highly objectionable procedure, which is derogatory to the self-respect of fully qualified and equally competent Indians now available in the bigger centres in India."

3. " The Bombay Branch is of the opinion that the distinction between the method of selection and nomination of the European and Indian members of the I. M. S. should forthwith be abolished. While considering that the method of open competitive examination was the best, till it could be arranged, all the officers should be recruited on the same basis without distinction of race."

4. " The Bombay Branch is further of the opinion that I. M. S. posts on the civil side should only be reserved in those areas where well-qualified medical or specialist aid is not available, and that selection of these men should be made on merit only."

U. P. BRANCH OF THE B. M. A.

1. " That this Branch does not approve of the complete removal of the I. M. S. from the civil side, and they do protest that the Government found it necessary to reserve certain districts for the European members of the Service."

2. " This Branch also protests against distinctive method of recruitment of the European and Indian members in the I. M. S."'

C. P. AND BERAR MEDICAL ASSOCIATION

1. Whereas the recent communique of the Government of India anent the re-organisation of the I. M. S. published on the 25th March, 1937, perpetuates the doctrine established by the Lee Commission that British people in services must have British doctors to treat them, and

2. Whereas it perpetuates the system of recruitment to the I. M. S. by nomination with selection instead of introducing pure and simple competition, and

3. Whereas, on the one hand 20 posts in British Military I. M. S. have been increased and on the other 10 posts in the Indian Military I. M. S. have been reduced in spite of the promised Indianisation of the army, and

4. Whereas there is a net increase of 10 Military I. M. S. posts thus leading to extravagance, and

5. Whereas although it ensures Military trained I. M. S. Officers completely, it provides partly Military trained Indian I. M. S. unless the Provinces impose Military liability on their Civil Surgeons and give them periodical Military training.

The C. P. and Berar Medical Association condemns unequivocally the policy adumbrated in the above communique and further resolves that the civil side of the I. M. S. be completely abolished.

BOMBAY MEDICAL UNION.

1. The Bombay Medical Union condemns unequivocally the policy of so-called Re-organisation of the I. M. S., as announced in the recent communique of the Government of India, on 25th March, 1937.

In practice this policy means the perpetuation of the European element in the Service and elimination of the Indian element.

2. The Bombay Medical Union hereby reiterates its oft-repeated demand for the complete abolition of the Civil side of the I. M. S.

CENTRAL COUNCIL OF THE I. M. A.

With regard to the Government of India Communique dated 25-3-37 regarding scheme of reorganisation of the Indian Medical Service, the Central Council requested the different branches to hold protest meetings and meetings condemning the action of the Govt. of India were accordingly held by several branches. This meeting of the Central Council of the Indian Medical Association also strongly condemns the new resolution of the Government on the future I. M. S. cadre, which reduces still further the number of Indians in the service, and though it reduces the pay of Indians yet those of Europeans are still further increased, the system of recruitment by nomination is still being retained and the resolution adds insult to injury in implying that the Indian Medical men are professionally inferior to Europeans. The Central Council considers this scheme most retrograde, reactionary and against the professed policy of Indianisation of the service.

DELHI BRANCH

" That this meeting of the Delhi Branch of the I. M. A. records its emphatic protest against the scheme for reorganisation of the I. M. S. as given in the recent communique of Government of India and considers this scheme, as most retrograde, reactionary and against the professed policy of Indianisation of the Service.

" This meeting further requests the Central Council of the I. M. A. to take up the matter in right earnest and have the united protest of the Central Legislatures recorded against the imposition on their heads before the inception of the much adumbrated Provincial Autonomy."

RAWALPINDI BRANCH

" This meeting of the Rawalpindi Branch of the Indian Medical Association condemns the policy of reorganisation of I. M. S. as announced in the Government of India Communique dated the 25th March, 1937, the Association holding that the policy meant perpetuation of the European element in Service and elimination of the Indian element."

HOOGHLY, CHINSURA AND CHANDERNAGORE BRANCH

* * * *

" That this Association totally disapproves of this scheme, as it introduces the policy of perpetuation of the British element and the elimination of the Indian element in the Indian Medical Service.

"That this Association, while unequivocally condemning the practice of recruitment of members in the I. M. S. by nomination, strongly urges on the Secretary of State for India and the Government of India to hold open competitive examinations simultaneously in India and Great Britain for this purpose."

"That this Association demands the complete abolition of the civil side of the I. M. S. as being wrong in principle, quite unnecessary for the purpose and fully derogatory to the self-respect of the Independent Medical Profession."

"That this Association emphatically protests against the reservation for British Officers of the I. M. S., of the four senior and the three junior specialist posts in the Calcutta Medical College and Hospitals, which have been successfully and creditably held for a long time by the Indian Officers of the I. M. S. and the members of the Provincial Medical Service respectively, and also reservation of such specialist posts in other provinces, as this is detrimental to the interests of the country, the medical profession, and the medical services of various grades.

MADRAS MEDICAL COLLEGE GRADUATES' RECEPTION

A reception to the new graduates which is a regular feature of the Madras Medical College students was held this year on the 10th August last with the Hon'ble Dr. T. S. S. Rajan, Minister for Public Health, Madras, as the chief guest.

Before the meeting was held Dr. Rajan and Dr. A. Lakshmanaswami Mudaliar, Principal, were given a rousing reception by the students. A joyous spirit of nationalism pervaded the atmosphere. The students wore badges of the tri-colour national flag. Mr. T. N. Alwa, Secretary, presented a badge to the Principal which he pinned to his coat with a smile.

The party was served with tea on the lawn of the Medical College which was tastefully decorated. Tea over, the party retired to the spacious hall in the College where the function was held.

Dr. A. Lakshmanaswami Mudaliar, Principal, presiding over the function, congratulated the students on the excellent arrangements they had made this year and said that it was a happy augury of the exceedingly good comradeship that existed in the College as befitting the noble profession which they would soon enter. It was a matter for gratification for them that larger number of students were being turned out every year. He was sure that in spite of distressing moments there were occasions when they could occupy themselves in the service of humanity and carry the torch of knowledge to the remotest parts of the country.

Proceeding, he observed that that particular occasion was unique for more reasons than one. They had had Ministers, Executive Councillors and other distinguished members of the medical profession to address them. This was the first time when they had the proud privilege of having as their Chief Guest to address them, a person who combined in himself all the noble qualities of the profession and held an exalted office in the Government of the province (cheers). He extended a cordial welcome to Dr. T. S. S. Rajan and said that their hearts were full, because after very many years it had been possible for the Madras Government to have as the Minister for Public Health and Medicine one who knew what he had to deal with. The advice coming from that quarter was always welcome and the advice would be given by one who had effaced himself and carved out a place in the country and profession and who had set an example of what the future of the medical graduates should be like.

The Minister's Speech

Dr. T. S. S. Rajan in the course of his address after thanking them for the hearty reception said that he had found that the evening's function had been made purposely pleasant for the reason that the graduates were going to launch into an unknown region which would open to them a beautiful vista of life. While wishing them well in their future, he would like to tell them that the Government would not be in a position to employ every one of them, service conditions opportunities being very limited. But if they had the energy, push and grit to fight the battle of life, service would go to them. This advice he was giving them as a practitioner of over thirty-three years' standing, having started life as the meanest of the mean, as a hospital assistant getting a princely salary of Rs. 25 per month. They had now greater facilities and he, therefore, wanted them to be cheerful, joyful, healthy and happy and to have enthusiasm and optimism while entering the battle of life.

He was one of those who never believed that the medical profession in this country was overcrowded and if any one told him that the profession was overcrowded he would laugh at his ignorance. But there was one unfortunate feature in medical education in this country in that it was very expens-

ive and out of all proportion to the general level of life in the country. Compared with the poor man in the village who was economically non-existent, medical students had become costly. They had put a good deal of capital in the bargain, leaving alone the State contribution. They should not imagine that they had not cost the Government a good deal of money, which they should remember came from the poor tax-payer. Having got the poor tax-payer's money to help them in their education, they should not grumble to go to the villages and serve them.

When they should go to the villages, they should not go with their suits and ties and turban and boots. If they did so, they would become an object of curiosity. The education that they had seemed in a way to make them unfit for service among the villagers. They should not think that the fifteen or twenty thousand rupees they had spent on their education should be got back and if they thought so, he would assure them that they would never succeed in their profession. Medical knowledge should not be valued in terms of rupees, annas, pies. They should make this knowledge serviceable to the people and through this service and the appreciation of the people they should secure the wherewithal for an honest life. They should have no complaint to make. He would like every one of them to start small but start well. He would also like them as practical young men to take practical training for, say six months or one year, and with the experience and knowledge gained, they must be able to prove to the villagers that they were worthy of their education. If they were successful and wise they would make their mark in the profession. If they were not able to tackle cases themselves, they should not get frightened and they would not get frightened if they had knowledge.

Proceeding the Minister warned the graduates of one thing. They might be extraordinarily clever They might have a good amount of practical knowledge. But these were not enough; for medical service was more than mere prescription, and surgical knife. It was really a human science. Unless they know the condition of the patients going to them, they would be a failure. They should know human nature, and how to deal with an ailing man. They should show sympathy and practical understanding. Knowledge was, of course, essential but without the art of understanding human nature they were bound to fail. That was not part of the lesson taught to you at present, and human psychology should form part and parcel of medical curriculum.

Turning next to the lady graduates, the Minister said that he was glad more ladies were taking to medical education and coming up in the profession. There was dire need for women doctors because women desired to be helped only by lady doctors. He particularly congratulated the Muslim lady graduate who had come out successful. She was the pioneer in her community and it was hoped that she would be able to induce more Muslim ladies to take up the profession.

Concluding the Minister said that he wanted them to feel proud that they were servants of humanity. ' You may get money, you may have palaces, you may have roaring practice but if the spirit of service is not in you as far as society is concerned, as far as the country is concerned, you are a dead person. If you want to make yourself felt, you must do service and the spirit of sacrifice must be inherent in a medical man. In war, in peace and in time of epidemics, play your part gallantly, and like men. If necessary you will have to give up your life. On the sacrifice you make will grow vigorous life. The more you serve humanity the more you create strength, ability and power to do more service. That is life."

Adverting next to the placard prominently displayed in the hall drawing his attention to the need for a medical hostel, the Minister said that no doubt they required a hostel.

It depended upon other persons and things over which he had no control. He would go abegging to the Finance Minister and do all he could in the matter, so that they might have a hostel worthy of the name (Cheers).

CAMPAIGN AGAINST TUBERCULOSIS

In order to give effect to the desire of His Exalted Highness the Nizam, expressed in his reply to the address presented on behalf of the subjects during the Silver Jubilee Celebrations in February last, that the first charge on the Silver Jubilee Fund should be a hospital and sanatorium for those suffering from pulmonary diseases, the Government are pushing forward the schemes for a Tuberculosis clinic and an Isolation Hospital in Hyderabad and a

Tuberculosis Sanatorium at Anantagiri Hills, in Vicarabad district.

The Nizam's Government have received from His late Majesty King George's Jubilee Fund a sum of Rs. 1,63,000 for relief work in Hyderabad and this sum has been deposited by the Public Health Department in the Imperial Bank of India. The Public Works Department have been asked to prepare plans and estimates for a Tuberculosis clinic to be constructed on the land of the Medical Department behind the suburban dispensary and also an isolation hospital at Lingampally to provide accommodation for forty patients with quarters for the staff. While treatment will be given to outdoor patients in the clinic, cases which require greater and more constant attention will be sent to the Isolation Hospital.

The Tuberculosis Sanatorium is expected to cost the Government about eight lakhs of rupees, all, or at any rate, the greater portion of which will be met from the Nizam's Silver Jubilee fund. The Government will, of course, provide separate funds for the upkeep and annual expenses of the sanatorium. The site selected at Anantagiri Hills is an attractive one and, it is said, will require only a moderate expenditure on slum clearance, road-making, drainage, etc. Water-supply is said to be ample and the Government will very soon be making arrangements for the generation of electric power for lighting. All amenities of modern treatment of tuberculosis will be provided at the sanatorium as also residences for the staff and rest houses for the visitors. The sanatorium will provide accommodation in the various classes of wards for 120 select cases suitable for sanatorium treatment. The selection, it is said, will be made by a special tuberculosis officer who will be in charge of all activities devised to combat the disease.

The Public Works Department has already called for tenders for the construction of the Administrative blocks and the construction of the hospital will commence as soon as funds are placed at the disposal of the Medical Department.

WOMEN AND MEDICINE

Delivering the inaugural address to the members of the Women's Intermediate College Association, on August 12, last Dr. B. K. Narayan Rao of the Mysore Medical Service observed that communist Russia while it might be tabooed in many respects, had certainly set an example to the whole world in the matter of medical research and organisation. In India, he said, it seemed to him necessary that home nursing and first aid should be introduced in some schools and colleges as compulsory subjects.

Dr. Narayana Rao addressed the students on "Women and Medicine." Sir Charles Todhunter, Private Secretary to the Maharaja of Mysore, occupied the chair.

In the course of his address, Dr. Narayan Rao said that women had a great and noble part to play in the medical profession. In India at the present day, there was a great and urgent need for women's services. In the Mysore State as in the rest of India, there were great opportunities for useful and urgent service. There were several avenues in which women could usefully engage themselves in and among these he mentioned maternity and child welfare, importance of nutrition, nursing, laboratory technique, dispensing, factory labour welfare, etc. In regard to all these, women were eminently fitted and he hoped that educated women graduates and undergraduates would take to these lines of social and useful service.

Sir Charles Todhunter observed that the State was desperately in need of more Kannada-speaking lady doctors. He referred to the great importance of the nursing profession in England and said that in India they had a long way to travel to rival those organisations in the West. Sir Charles referred to the recent speech of Mr. C. Rajagopalachari, Premier of Madras, at the Nurses' Association and observed that the art of nursing was much more important than the art of healing. The Mysore State Women's Conference had repeatedly urged that Home Nursing and First Aid should be made compulsory subjects in the High Schools. The speaker did not know what action had been taken. But he was glad to hear that in the Women's Intermediate College, they were going to have lectures on these subjects by Mrs. Ratnamma Isaac.

REMEDYING DEFECTS IN KING GEORGE HOSPITAL

Dr. M. V. Krishna Rao of Vizagapatam, Joint Secretary of the Andhra Medical Association and Member Faculty of Medicine of the Andhra Univer-

sity, interviewed Dr. T. S. S. Rajan, the Minister for Public Health and Medicine, on August 10, last at the Secretariat and made representations to the Minister on behalf of the Andhra Medical Association, the Old Boys' Association of the Vizagapatam Medical College and the Vizagapatam Medical Practitioners Guild, with regard to the scheme for remedying the defects in the Vizag King George Hospital with a view to securing early recognition of the Indian Medical Council for the Degree training given in the Vizag Medical College.

Dr. Krishna Rao urged that this problem of the improvement of King George Hospital had been pending since 1927, when the General Medical Council's representative refused to recommend recognition for the Andhra M. B. B. S. degree and severely criticised that the "College had been opened before the Hospital was completed." No attention was paid by the Madras Government to this matter till 1934 when the Indian Medical Council Inspectors directed strong criticism to the Hospital side of the Institution. They, while admitting (1) that the training of the students was as efficient as possible; (2) that facilities for clinical instruction were adequate; (3) the museums and laboratories were excellent; (4) the members of the teaching staff competent in all respects; and (5) that the knowledge of the final year students at examinations was sufficient, insisted that the following should be immediately added to the hospital:—

(1) An up-to-date out-patient department; (2) a specific block in the maternity section; (3) extensions to the X-Ray Department and better equipment; and (4) improved operation theatres.

They also desired numerical increase in the teaching and nursing staff. In 1936 the Legislature discussed this question, accepted the principle and sanctioned the needed additions to the staff. It was found that the department estimates for the scheme of improvements swelled far beyond expectation, up to 24 lakhs. The public were feeling that instead of confining the demand to the immediate needs pointed out by the Indian Medical Council, an ominous demand for numerous other improvements was made by the department. It is understood that the Engineering Department wanted the plans and estimates for the whole scheme to be ready with a view to giving the contracts of the whole scheme to one of the big efficient foreign engineering firms. It was also understood that the department had reconsidered the question and toned down the total demand to about 17 lakhs recently.

Dr. Krishna Rao urged that the rectification of the four main outstanding defects pointed out by the Indian Medical Council required only about six to seven lakhs and that there was a strong feeling in the profession and the public of Andhra Desa, that the present Ministry should immediately provide for at least one unit for the out-patient department which meant only 2·24 lakhs for the first year. Such a concrete step would persuade the Indian Medical Council to immediately accord recognition to the Andhra M. B. B. S. Degree. 187 Medical Graduates had gone out of the Vizag Medical College and there were 250 students on the rolls of the College, who had no place in the Medical Register, though their standard was approved. There was also a widespread apprehension in Andhra Desa that the question of the continuance of the Vizag Medical College was likely to be reopened, in case no grants were made in the budget. This impression required to be corrected authoritatively.

Incidentally Dr. Krishna Rao mentioned that not one of the 187 Medical Graduates had a place in the Madras Provincial Service so far. But they, constituting the bulk of the independent profession in Andhra Desa, could assure the Minister of their support to any progressive policy of the Minister and were prepared to lend their services honorarily in any schemes that the Minister might introduce with regard to Public Health.

The Minister at the outset wanted to make it clear that the continued existence and future of the Vizag Medical College were assured, so long as he continued to be Minister in charge of the portfolio. There was absolutely no foundation, he wanted to assure the Medical profesion and the public, for any misapprehension on this score. He was fully aware of and appreciated the needs of the Vizag Medical College and the King George Hospital. But, unfortunately, no provision had been made in the present budget, as the proposals in final form had not been before the Government in time for them to consider the whole scheme and determine what beginning was to be made immediately. The item had not been included in the budget prepared by the previous 'Interim' Ministry. He regretted very much

that under those conditions, no provision could be made in the present budget but he expected the proposals to come up for consideration by about October next, in connection with the next budget. The proposals will receive very sympathetic consideration, though he could not at this stage give any assurance with regard to the extent to which provision might be possible in the next budget. His general policy was to place sanitary and water supply schemes before building schemes, but he recognised that the building schemes of the Vizag Hospital was a scheme on which huge commitments had been made by the Government and therefore deserved special consideration. He hoped to be able to visit Vizagapatam at an early date after the budget Session and acquaint himself with the question on the spot.

The Minister added that he was busy thinking about progressive schemes for public health and medical relief and expected the hearty co-operation of the independent profession in his endeavours.

NO SMALLPOX IN THE SOVIET UNION

Vaccination was not compulsory in tsarist Russia; every year more than 100,000 persons became infected with small-pox. During the World War and the civil war the number of patients reached thirty in each 10,000 persons. The Soviet government issued in 1919 and 1924 two decrees about compulsory vaccination. Small-pox then gradually diminished; 14,154 small-pox patients were registered throughout the country in 1927 and only 400 in 1936. There were no registered patients in the Soviet Union during January and February, 1937. About 40,000,000 persons are vaccinated and revaccinated every year. In middle Asia in 1936 a special investigation was made to find whether any patients were hidden by the population, but no instances of such hiding were found. It is interesting to note that in India, during the period January to September, 1936, 203,107 cases of small-pox were registered and in the United States 6,254 cases. (*Jour. American Medical Association*, June 26, 1937, page 2239).

BOOK REVIEWS

THE PRACTITIONERS LIBRARY OF MEDICINE AND SURGERY. Eye, Ear, Nose and Throat. Volume XI. D. Appleton-Century Company incorporated: New York, London.

This section (Eye) while dealing especially with the clinical side of ophthalmology without going into intricate theories and discussions on complex subjects has incorporated those proved methods which will be of use in every day practice. Stress has been given especially on diagnosis and treatment. Modern aids such as slit lamp microscopy, and localisation of intraocular foreign body by X-rays have been thoroughly dealt with. The systemic and general diseases with their ocular manifestations have been well discussed.

The volume is attractively got up and contains some nice photographic representations of clinical cases and will " be of great utility in the eye problems which confront the physicians engaged in general work."

N. K. Munshi.

The Ear, Nose and Throat section comprises the last three parts of the volume. The book is well written and contains all the up-to-date teachings on the subject. Apart from the classical descriptions of diseases and their treatment, it has special chapters devoted to academic discussions on Development, Physiology, Histology, Pathology, etc., which are likely to be of greater interest to a specialist than to a busy general practitioner for whom, however, some more detailed descriptions with illustrations of commoner operative procedures, such as, myringotomy, removal of nasal polypi by cold snare, tonsillectomy by dissection, etc., would have been more welcome and useful.

K. K. Ghosh.

BULLETIN OF THE OPHTHALMOLOGICAL SOCIETY OF EGYPT, Vol. XXIX, Session 33, 1936—Cairo, Misr Press, S. A. E.

It comprises the proceedings of the Ophthalmological Society of Egypt during its thirty-third session, at which about 18 papers were read. The main

subject of discussion was pathology and treatment of trachoma. There are three papers on histopathology of trachoma, one on 'the constitutional side in pathology and treatment of trachoma three on the treatment of trachoma. The subject of pathology of trachoma is introduced by Dr. R. P. Wilson. The next two papers contain very useful information on the subject. A very illuminating and interesting paper is the history of trachoma treatment in antiquity and during Arabic middle ages by Dr. Max Meyerhof. It traces the history from the time of Hippocrates. In the review of the treatment of trachoma, Drs. Attiah and El-Tobgy have thoroughly discussed all the therapeutic agents, their mode of application and their effects. The operative section contains three papers of which one is in Arabic, other papers on cornea, iris, lens, sympathetic ophthalmia, contact glasses and tuberculosis of the eye, in the last of which three good cases are reported, *viz.* (a) primary tuberculous affection of the conjunctiva and lacrymal gland in a girl of 17, (b) the 2nd case is an intra-ocular tubercular mass (primary) perforating the sclera and fungating on the surface in a child of 5, (c) in the third case whole of the left globe was full of a caseating mass. The child had also pulmonary affection.

The volume contains some nice microphotographs and photographs which have enhanced the value of the papers communicated. In short, this volume contains useful papers and discussions on some important diseases of the eye. A number of printing mistakes are noticed.

N. K. MUNSHI.

OBITUARY

DR. GOPAL NARAIN KHANNA, M.B.B.S.,

Dr. G. N. Khanna, one of the leading practitioners of Delhi, the Vice-President of the Delhi Medical Association, the Honorary Secretary and Treasurer of the Delhi Branch of the Indian Medical Association and formerly Chief Medical Officer, Bharatpur, breathed his last on the 29th June, 1937, at the early age of 45.

Dr. Khanna was one of the founders of the Delhi Branch of the Indian Medical Association and had been its Honorary Secretary and Treasurer since inception. He was the General Secretary of the XI-All-India Medical Conference held in Delhi in 1934. It was entirely due to his personality and hard work that the Conference achieved the success it did.

He contributed in no less a degree to the success of the Delhi Medical Association of which he had been for years the Hony. Secretary and later the Hony. Treasurer. This year he was elected the Vice-President.

In the sad and untimely death of Dr. Khanna the Indian Medical Association has lost a valuable worker—quiet, unassuming and true to its cause, and the profession in Delhi has lost a generous friend, a loyal colleague and a gentleman.

DR. GOPAL NARAIN KHANNA, M.B.B.S.

The following resolution was passed at a joint meeting of the Delhi Medical Association and the Delhi Branch of the Indian Medical Association, held on the 1st July in the D. M. A. Hall with Dr. J. K. Sen, President, of the Delhi Branch of the I.M.A. in the Chair:—

'The joint meeting of the Delhi Medical Association and the Indian Medical Association, Delhi Branch, records its deep sense of sorrow at the untimely demise of Captain Gopal Narain Khanna, Vice-President of the Delhi Medical Association and Secretary and Treasurer of the Delhi Branch of the I. M. A. and extends its heart-felt sympathy with the bereaved family.'

It was also decided to have a portrait of Dr. Khanna in the hall of the Association.

Drs. J. K. Sen, N. C. Joshie, A. C. Sen, A. P. Mitra, S. C. Sen and B. M. Sharma paid glowing tributes to the many sterling qualities of their deceased colleague.

One of Dr. Khanna's last wishes was to present his medical books to the Library of the Association.

XIV ALL-INDIA MEDICAL CONFERENCE, MADRAS, 1937

BULLETIN NO. I

At a meeting of the Reception Committe of the XIV All-India Medical Conference, held at "Gan Mandir," Madras, on Saturday, the 28th August, 1937, the following office-bearers were chosen:—

I. *Chairman of the Reception Committee:*

Lt.-Col. K. G. Pandalai, M.B., F.R.C.S., I.M.S.,

II. *Vice-Chairman:*

1. Capt. V. D. Nimbkar, F.R.C.S. (Edin.).
2. Dr. M. Subramanya Iyer, M.B., C.M.
3. Dr. V. Krishna Menon, L.M.P., (Malabar Medical Association).
4. Lt.-Col. M. M. Cruickshank, M.D., B.SC., C.H.M., F.R.C.S.E., D.O.M.S. (Lond.), I.M.S,
5. Rao Bahadur Dr. A. Lakshmanswami Mudaliar, B.A., M.D., F.C.O.G. (Eng.).

III. *Secretaries:*

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1. Dr. U. Krishna Rau, M.B.B.S.

Secretary for the Scientific Section

2. Dr. C. P. Viswanatha Menon, F.R.C.S., M.S.

Secretary for the Exhibition

3. Dr. K. P. Rama Hebbar.

Secretary-in-charge of the Reception of Delegates and Entertainments

4. Dr. M. Sanjiva Rao, M.B.B.S.

IV. *Treasurer:*

Dr. K. L. Narayana Rao, M.B.B.S.

V. *Members of the Executive Committee:*

1. Dr. K. B. Bujanga Rao, L.M.P.
2. ,, N. Mangesha Rao, F.R.C.S. (Edin.), M.B., D.L.O.
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10. ,, M. R. Bail, M.B.B.S.
11. ,, C. V. C. Rao, L.M.P.
12. ,, Capt. R. L. H. Minchin, M.D. (Edin.), I.M.S.

It was also resolved to request all members of the medical profession to join the Reception Committee in large numbers and make the ensuing XIV All India Medical Conference a great success. Members of the profession who have not already joined the Reception Committee are requested to send in their membership fee of Rs. 10/- to the General Secretary, 323, Thambu Chetty Street, G. T., Madras.

In the Scientific Section, members of the profession are earnestly requested to read papers of Scientific and general interest. Those who are willing to do so, are requested to communicate with the Secretary- in-charge of the Scientific Section "Binfield" Poonamalli High Road, Vepery, Madras.

A very instructive Exhibition is also being arranged during the Conference week. Firms wishing to exhibit their goods and products, scientific appliances or medical books are requested to communicate with the Secretary in charge of the Exhibition, 246, Thambu Chetty Street, Madras.

Nagendra Nath Maitra, M.D. (Rome), D.M.R.E.
A. C. Mitra, M.B., B.SC.

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